NOTE

THE USE OF EXPERT EVIDENCE IN RES IPSA LOQUITUR CASES

INTRODUCTION

"[W]hen through any instrumentality or agency under the management or control of a defendant or his servants there is an occurrence, injurious to the plaintiff, which in the ordinary course of things would not take place if the person in control were exercising due care, the occurrence itself, in the absence of explanation by the defendant, affords . . . evidence that there was want of due care." 1

This doctrine, prompted by common sense,2 has been known for nearly a century as the doctrine of res ipsa loquitur.3 Its meaning, literally "the thing speaks for itself," is simply that the fact that the accident occurred is sufficient to afford some evidence that the defendant was negligent.4

Res ipsa loquitur is a form of circumstantial evidence,5 based on the premise that from the past experience or common sense of the trier of fact the event which resulted in the plaintiff's injury does not ordinarily happen in the absence of negligence.6 Often, however, there is no basis of common


2. See C. MOrRIS, Toa Ts 129-30 (1953) (hereinafter cited as MOrRIS).

3. The term was first uttered in a negligence case by Baron Pollock in Byrne v. Boadle, 2 H. & C. 722, 159 Eng. Rep. 299 (1863), and has been commonly associated with cases in which the mere fact that an accident has taken place is said to constitute evidence of negligence, Prosser, supra note 1, at 184; see MOrRIS at 129-30. Although most American jurisdictions recognize the doctrine, Pennsylvania limits it to cases involving common carriers or public utilities. Seerraty v. Philadelphia Coca-Cola Bottling Co., 198 F.2d 264, 265 (3d Cir. 1952). The doctrine is not applied in Michigan. Balance v. Dunnington, 241 Mich. 383, 217 N.W. 329 (1928).

4. Prosser, Res Ipsa Loquitur in California, 37 CALIF. L. REV. 183, 190-91 (1949). Courts are divided regarding the weight to be given the doctrine. See note 11 infra.

5. Prosser, supra note 4, at 189; see 2 HARPER & JAMES § 19.5. It should be recognized that the doctrine is only one form of circumstantial evidence, and in many cases other evidence of this general class can be introduced even though the doctrine is inapplicable or not recognized in the jurisdiction. See Francisco v. Miller, 14 N.J. Supr. 290, 296, 81 A.2d 803, 806 (App. Div. 1951); Annot., 141 A.L.R. 1016, 1018 (1942).

6. Prosser, supra note 4, at 191; Interview with Norman Goldberg, Ph. D., Professor of Physics, University of Pennsylvania, October 22, 1957 (hereinafter cited as GoLdBERG I NTErVIEWS).

(731)
knowledge upon which either judge or juror can determine whether or not the occurrence which gave rise to the cause of action would ordinarily have taken place in the absence of negligence on the defendant's part. Typically, the applicability of the doctrine in such cases is one of conjecture on the part of the court. This approach overlooks the modern trend toward use of expert evidence,7 which has led to more enlightened decisions and verdicts on the part of judge and jury.8

It would seem that expert evidence might well be introduced by either party to afford a foundation, or demonstrate the lack thereof, for application of the doctrine of *res ipsa loquitur* where a layman cannot really say that the thing does or does not speak for itself.9 Similarly, such evidence might also be used by the plaintiff where the doctrine is applicable, to show specific acts of negligence on the defendant's part. Conversely, the defendant might introduce expert testimony to indicate that he was not negligent in the particular case at hand, even though the doctrine would ordinarily be applicable to a similar factual situation. It will be the object of this Note to explore these possibilities of using evidence of an expert nature in *res ipsa loquitur* cases.10

The Use of Expert Evidence To Determine Whether Res Ipsa Loquitur Should Be Invoked in a Given Factual Situation

The applicability of the doctrine of *res ipsa loquitur* is of vital importance to both parties. When invoked, proof of occurrence of the accident which gave rise to the injury suffices to take the case to the jury,11 which

7. The term "expert evidence" as used in this Note includes within its scope scientific and statistical evidence, which, in effect, are merely specialized forms of this general category of proof.

8. See Averbach, Finding an Expert for Your Case, Practical Lawyer, April 1957, p. 77. This article presents an invaluable directory of potential sources of expert testimony.


10. In many jurisdictions, *res ipsa loquitur* is said to apply in an action against a common carrier arising out of a collision with another vehicle or object. Morris at 130; Prosser, op. cit. supra note 9, § 42 at 201. The use of the doctrine in this area, however, is more a reflection of the greater burden of proof required of carrier-defendants than of any probability that the result stemmed from the defendant's negligence. Ibid. For that reason, these carrier cases will not be considered in this Note.

11. 2 Harper & James § 19.11, at 1099; Morris at 135-36; Annot., 153 A.L.R. 1134, 1136 (1944). Some courts treat *res ipsa loquitur* as creating a presumption of negligence in the sense that the burden of coming forward with evidence of due care is shifted to the defendant; once he does so, the burden of proof remains upon the plaintiff. A few courts treat the doctrine as creating a full presumption of negligence, shifting to the defendant the burden of proof as well as that of coming forward with evidence in his favor. A majority of the courts, however, treat the doctrine as permitting, but not compelling, an inference of negligence; it is sufficient to support a verdict for the plaintiff, but neither compels such a verdict nor relieves the plaintiff of the burden of proof, even though the defendant might offer no evidence in his behalf. See 2 Harper & James § 19.11; Morris at 135-38; Prosser, Torts § 42, at 211-13 (2d ed. 1955); Comment, *Res Ipsa Loquitur in Kansas*, 5 Kan. L. Rev. 88, 92-93 (1956).
is apt to be sympathetic toward the injured plaintiff. Thus, misapplication may be prejudicial to the defendant. On the other hand, a worthy plaintiff who was in fact injured as a result of defendant's negligence may have no proof other than the happening of the event which injured him. An unwarranted refusal on the part of the court to apply *res ipsa loquitur* will mean that his case must be dismissed.

There is disagreement as to the degree of probability that the accident resulted from defendant's negligence necessary to permit application of the doctrine. A majority of courts require only a strong probability that the accident would not have occurred in the absence of defendant's negligence; the plaintiff need not exclude every other possible cause. A few courts insist that the doctrine can be applied only if it was almost impossible for the accident to have occurred had the defendant not been negligent.

In many instances, the facts clearly demonstrate that someone has been negligent, and *res ipsa loquitur* has properly been applied by the courts even in the absence of expert testimony. Thus, when a plaintiff is injured by falling plaster, a majority of courts apply *res ipsa loquitur* in the absence of some explanation for the cause of the accident. These decisions seem consistent with scientific theory. Likewise, the doctrine has been applied,

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12. 2 HARPER & JAMES at 1099.
14. Some courts stress this point. Thus, they refuse to allow the doctrine to be applied when specific acts of negligence are alleged or proved. 2 HARPER & JAMES § 19.10; MORRIS at 131-32; see text and notes at notes 94-103 infra. A majority of courts, however, permit the plaintiff to avail himself of the doctrine, even though specific acts of negligence are alleged or proved. 2 HARPER & JAMES § 19.10; see text and note at note 100 infra. Similar considerations induce a few courts to refuse to allow *res ipsa loquitur* to be applied unless evidence of the cause of the accident is more accessible to defendant than to plaintiff. See Dorman v. T. Smith & Son, Inc., 223 La. 29, 45-46, 64 So. 2d 833, 835 (1953); Francisco v. Miller, 14 N.J. Super. 290, 295, 81 A.2d 803, 805-06 (App. Div. 1951); 3 STEVENSON, NEGLIGENCE IN THE ATLANTIC STATES § 911 (1954). But see 2 HARPER & JAMES § 19.9; PROSSER, op. cit. supra note 9, § 209.
16. Note, 37 CORNELL L.Q. 543, 546 (1952). This approach has been criticized on the ground that it is almost impossible to find a case where there are no alternative possible causes of the accident. It is said that where alternative explanations are presented, "it is for the jury to say whether ... the most probable explanation is negligence." PROSSER, *Res Ipsi Loquitur in California*, 37 Calif. L. Rev. 183, 195-96 (1949).
17. For examples, see id. at 192.
18. E.g., Windas v. Galston & Sutton Theaters, Inc., 35 Cal. App. 2d 533, 96 P.2d 170 (1939); Law v. Morris, 102 N.J.L. 650, 133 Atl. 427 (Ct. Err. & App. 1926); Morris v. Zimmerman, 138 App. Div. 114, 122 N.Y. Supp. 900 (1st Dep't 1910); see Prosser, *supra* note 16, at 195; Shain, *Res Ipsi Loquitur*, 17 So. Calif. L. Rev. 187, 197 (1944); Annot., 24 A.L.R.2d 643, 650-52 (1952). Contra, Thompson v. Coles, 37 Del. (7 W.W. Harr.) 83, 92, 180 Atl. 522, 526 (Super. Ct. 1937) ("There was no evidence that the ceiling had ever been in a condition that required the defendants to repair it or of notice to defendants that it was out of repair, or that there is any means by which a person can ascertain when a ceiling is about to fall.").
19. "Obviously, if an earthquake occurs, the owner should not be liable. But ordinarily, if plaster falls, it is because it is old, and the occurrence can usually be predicted." GOLDBERG INTERVIEW.
even in the absence of expert testimony, where an explosive has unaccountably gone off while in the hands of its prospective user; \(^{20}\) this result also seems to have a valid factual base. \(^{21}\) On the ground that even a layman is able to say as a matter of common knowledge and observation that sponges should not be left in patients following operations if there has been careful professional treatment, \(^{22}\) *res ipsa loquitur* is applied to cases where a patient suffers injuries as a result of a sponge having been left in his body. \(^{23}\) Since such a result is unlikely to occur if standard operative procedure is followed, \(^{24}\) it would seem proper to apply the doctrine in such cases, thus shifting at least a portion of the evidentiary burden away from the plaintiff; \(^{25}\) a doctor who has followed careful operative procedure is, of course, free to produce evidence to this effect, and since the standard of care required of a physician is that followed by other doctors in his locale, \(^{26}\) a careful physician should be able to offset the effect of the doctrine even if it is used against him.

On the other hand, there are some cases in which the court's inexpert evaluation of the likelihood that the accident was caused by defendant's

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22. *Res ipsa loquitur* is not ordinarily applied against the physician in malpractice cases; the plaintiff in such cases is usually required to produce specific evidence through expert testimony to prove the physician's lack of care. However, the doctrine may be applied where "the undesirable result is such that it is evident even to a layman" that it would "not have occurred except for the doctor's negligence." Johnston v. Rodis, 151 F. Supp. 345, 348 (D.D.C. 1957); see Engelking v. Carlson, 13 Cal. 2d 216, 221, 88 P.2d 695, 697-98 (1939); Belli, *An Ancient Therapy Still Applied: The Silent Medical Treatment*, 1 VILLANOVA L. REV. 250, 268-69 (1956); Prosser, *supra* note 16, at 210-11; 9 BROOKLYN L. REV. 335 passim (1940).

23. *E.g.*, Ales v. Ryan, 8 Cal. 2d 82, 64 P.2d 409 (1936); Mitchell v. Saunders, 219 N.C. 178, 13 S.E.2d 242 (1941); Prosser, Torts § 42, at 210 (2d ed. 1955); Note, 18 MISS. L.J. 448, 452 (1947); 40 COLUM. L. REV. 161, 163 (1940).

24. There are certain basic procedures which are followed by a careful surgeon with regard to the use of sponges in the course of operative procedure. Standard operating room practice is now formalized. The surgeon is responsible for the number of sponges available for use during the operation. He must either count them personally or accept the statement of one qualified to do so, such as the nurse assisting him. He should also use a technique in which it is not a simple matter to overlook a sponge. The sponge should contain some matter discernible to the X-ray, and there should be a tape on the sponge which hangs outside of the wound. At the end of the operation and before the wound is closed, the surgeon is responsible for taking a sponge count, which must agree with that previously made. The number of sponges should not be left to memory, but a blackboard in the operating room should itemize by types the sponges to be accounted for. Some ultra-conservative institutions have two persons taking the sponge counts. Interview with Dr. I. S. Ravdin, John Rhea Barton Professor of Surgery, School of Medicine, University of Pennsylvania, Chairman, Board of Regents, American College of Surgeons, Nov. 21, 1957 (hereinafter cited as RAVDIN INTERVIEW). See Ales v. Ryan, *supra* note 23 (no accurate sponge count taken; no safety appliance used on sponge).

25. See note 11 *supra*.

negligence resulted in a decision which was probably not in accord with the actual facts. Thus, in Stanolind v. Lambert,27 plaintiff's water well became filled with sand following a nearby explosion of dynamite by defendants. The appellate court reversed a decision for plaintiff, holding that "the doctrine of res ipsa loquitur cannot be given such broad application as to permit negligence and proximate cause issues to be inferred simply from the setting off of an explosive charge and damage to a well or cistern." 28 Yet, the damage to plaintiff's wells followed too closely upon the heels of the explosion to be attributable merely to an act of God; an examination of the geographical strata in the area of the blast might have enabled the defendant to predict the ensuing result from his blasting operations.29 Scientific evidence to this effect could have convinced the court that res ipsa loquitur was properly applicable, and might have saved this case for the plaintiff.30 In DeCicco v. Marlou Holding Co.,31 the court applied res ipsa loquitur and permitted a jury sympathetic to the plaintiff to decide a case, even though there was no scientific basis for application of the doctrine. Plaintiff was killed by a piece of defendant's building which struck him during a hurricane. The court pointed out that "a fallen object is the common circumstance calling for the invocation and application of the doctrine," 32 and held that the possibility that the accident might have been caused by the storm was a question for the jury. Expert evidence as to the effect of winds of hurricane force upon a structure such as defendant's might have convinced the court that the accident did result from an act of God, and thereby precluded application of the doctrine. In the recent case of Henthorn v. M.G.C. Corp.,33 plaintiff was injured when his truck skidded into defendant's tractor-trailer unit which was blocking the highway during a blinding snow storm. A statute forbade a vehicle from blocking the highway unless disabled "in such a manner . . . that it is impossible to avoid stopping . . . in such a position." 34 Defendant's driver was killed instantly by the impact, and there was no direct evidence as to why his truck was blocking the road. The court, referring to the above statute, held the doctrine of res ipsa loquitur to be applicable, notwithstanding the defendant's position that the truck might have skidded without the fault of its driver into a position from which it could not be

28. Id. at 126. Texas is one of those jurisdictions which requires some showing of negligence in order to charge a party for damages resulting from vibrations or concussions in blasting operations. Other jurisdictions hold the blaster liable for all such damage regardless of his negligence. 21 Miss. L.J. 289, 290 (1950); Annot., 20 A.L.R.2d 1372 (1951).
29. Goldberg Interview.
30. The court indicated that it might have applied res ipsa had expert testimony been introduced: "In a case such as this, the matter is one for proof and cannot be supplied by common knowledge, as it is in some res ipsa loquitur cases." 222 S.W.2d at 127.
32. Id. at 4, 44 A.2d at 899.
33. 1 Wis. 2d 180, 83 N.W.2d 759 (1957).
moved. This contention was not supported by expert testimony; had it been, it is possible that the doctrine would have been held inapplicable.\(^{35}\)

Thus, it can be seen that the absence of expert evidence may be extremely harmful to a plaintiff or a defendant when the court is pondering the applicability of *res ipsa loquitur* to a given factual situation. This is especially true when the accident is unique. Of course, once a court rules upon the applicability of the doctrine on the basis of expert testimony, this precedent serves as some assurance that such testimony will not be needed in similar cases arising in the future in the same jurisdiction.\(^{36}\)

**Cases Where Plaintiff's Expert Evidence Resulted in Application of Res ipsa Loquitur**

Some plaintiffs have successfully used expert testimony to convince the court that the facts did speak for themselves. These plaintiffs were able to get their cases to the jury. Of course, the effect of such authoritative testimony upon the jury was also helpful. In the majority of these cases, there was a verdict for the plaintiff. One of the earliest examples of this sort of trial strategy was *Judson v. Giant Powder Co.*\(^{37}\) An explosion completely destroyed defendant's nitroglycerine factory, and damaged plaintiff's property as well. No direct evidence as to the cause of the explosion was available, for "the witnesses who saw and knew ... were scattered to the four winds."\(^{38}\) *Res ipsa loquitur* was held applicable on the basis of expert evidence produced by plaintiff indicating that if the process of manufacturing and handling the explosives had been properly carried out, the explosion would not have occurred.\(^{39}\)

In *Hanaman v. New York Tel. Co.*,\(^{40}\) plaintiff successfully withstood a motion for a nonsuit by introducing testimony that the electric shock which he suffered while using telephone equipment supplied and serviced by defendant was due to the latter's negligence.\(^{41}\) Similarly, in *Buffam's v. City of Long Beach,*\(^{42}\) expert testimony enabled the plaintiff to avail himself of the *res ipsa* doctrine by indicating that a water main which burst would not have done so had it been properly cared for and maintained.

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35. In general, the mere fact that an automobile skids on a slippery highway does not render the doctrine of *res ipsa loquitur* applicable. Annot., 113 A.L.R. 1002 (1938) (cases cited therein).

36. See Morris at 133.

37. 107 Cal. 549, 40 Pac. 1020 (1895).

38. Id. at 553, 40 Pac. at 1020.

39. *But see* 2 Harper & James § 19.6, at 1083 n.15: "This attitude suggests that the court was not really concerned so much with examining the probabilities of negligence as with fixing liability for injury from a dangerous activity."


41. Although *res ipsa loquitur* was not referred to by name, the court in effect applied the doctrine.

42. 111 Cal. App. 327, 295 Pac. 540 (1931). See also McCray v. Galveston, H. & S.A. Ry., 89 Tex. 168, 34 S.W. 95 (1896) (exclusion of expert testimony that rails that fell on plaintiff would not have done so if properly stacked held erroneous, and *res ipsa loquitur* held applicable).
And in a series of recent California malpractice cases, res ipsa loquitur to be applicable on the basis of expert testimony, even though the result of professional care was not such as would enable a layman to say as a matter of common knowledge that due care had not been exercised.

### Cases Where Defendant's Expert Evidence Precluded the Application of Res Ipsa Loquitur

Conversely, defendants have been able to preclude use of the doctrine of res ipsa loquitur, and thus keep a case away from an often hostile jury, by showing through experts that the accident was likely to have occurred even in the absence of negligence. In *Texas & N. O. R.R. v. Schreiber*, the appellate court reversed a verdict for plaintiff and held that the case was improperly submitted, on the basis of res ipsa loquitur. In that case, plaintiff’s home was damaged by smoke, soot, and oil emitted from defendant’s locomotive. Testimony of the railroad’s master mechanic indicated that such a result will occur in the usual course of locomotive operation, even though proper care may be used. In *Lehner v. McLennan*, res ipsa loquitur was not applied where trees of a counter-claiming defendant were injured following fumigation by the plaintiff. The plaintiff had introduced expert testimony to the effect that such injuries could result even if the job were conducted in the safest possible manner.

It is perhaps in the malpractice cases that expert testimony can most effectively be used by a defendant to show that res ipsa loquitur is inapplicable to the factual situation at hand. The doctrine is traditionally applied only in those medical cases in which a layman could say as a matter of common knowledge that the result of the treatment would not have occurred in the absence of negligence. However, there are many instances where an undesirable result of treatment may occur in the absence of negligence, “common knowledge” of the layman notwithstanding. For example, it has been indicated that the doctrine might be applied against a surgeon who knocks out a tooth during a tonsillectomy. Yet, it is possible in some operations of this sort, that the patient’s tongue may drop backward and interfere with his breathing; the insertion of an instrument in the patient’s mouth to correct this condition can result in dislodgement.

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44. See note 22 *supra*.
47. 54 Cal. App. 491, 202 Pac. 41 (1921).
48. See note 22 *supra*.
of a tooth. Such an accident may thus flow from the surgeon’s activities to protect the patient, rather than from any lack of care on his part.\textsuperscript{50} The fact that a jawbone is fractured in the course of extracting a tooth might seem to the layman to suggest negligence on the part of the dentist, but in Donoho v. Rawleigh,\textsuperscript{51} testimony by a number of dental surgeons that the defendant had proceeded in a careful and skillful manner was sufficient to withstand the application of the doctrine of \textit{res ipsa loquitur}.\textsuperscript{52} Likewise, expert testimony precluded the application of \textit{res ipsa loquitur} when plaintiff suffered paralysis following an operation in which a spinal anaesthesia was used.\textsuperscript{53}

\textbf{The Borderline Cases}

There are certain factual situations in which the courts have divided as to the applicability of \textit{res ipsa loquitur}. These cases suggest a fertile field for expert evidence. For example, where an automobile has suddenly and unaccountably left the road, some courts have been willing to infer negligence on the part of the driver\textsuperscript{54} while others have not.\textsuperscript{55} Recent statistical studies with regard to the cause of automobile accidents might well be introduced in such cases to determine the appropriateness of \textit{res ipsa}.\textsuperscript{56} Similarly conflicting results have been reached in boiler explosion cases where no specific evidence regarding the cause of the accident is introduced.\textsuperscript{57} Again experts might be of assistance.\textsuperscript{58}

\textsuperscript{50} RAVIN INTERVIEW; \textit{cf.} Brown v. Shortledge, \textit{supra} note 49.

\textsuperscript{51} 230 Ky. 11, 18 S.W.2d 311 (1929).

\textsuperscript{52} But \textit{cf.} Eichholtz v. Poe, 217 S.W. 282 (Mo. 1920) (fact that plaintiff's jaw was broken while defendant extracted a tooth held sufficient to support a verdict; \textit{res ipsa loquitur} not applied by name).

\textsuperscript{53} Ayers v. Parry, 192 F.2d 181 (3d Cir. 1951), \textit{cert. denied}, 334 U.S. 980 (1952). But \textit{cf.} Seneris v. Haas, 45 Cal. 2d 811, 291 P.2d 915 (1955) (\textit{res ipsa loquitur} held applicable where injuries resulted from a spinal anaesthesia after testimony of defendants established that plaintiff's injuries were not such as usually happen when due care is exercised and proper procedure is followed). See also Wallstedt v. Swedish Hospital, 220 Minn. 274, 19 N.W.2d 426 (1945) (experts established that lesion on patient's thigh may not have been caused by a hot water bottle as alleged by plaintiff; \textit{res ipsa loquitur} held inapplicable). For disapproval of the \textit{Wallstedt} case, see Comment, 31 IOWA L. REV. 456 (1946).

\textsuperscript{54} E.g., Worsham v. Duke, 220 F.2d 506 (6th Cir. 1955); Reibert v. Thompson, 302 Ky. 688, 194 S.W. 974 (1946).

\textsuperscript{55} E.g., Galbraith v. Busch, 267 N.Y. 230, 196 N.E. 36 (1935).

\textsuperscript{56} Such studies indicate that mechanical defects play an insignificant part in automobile accident causation. One study shows that only 3.5% of all cars involved in accidents have had known mechanical defects, and in only 0.25% of all cases was it shown that the defect played a part in causing the accident. See Jones \& Dickenson, \textit{Accident Proneness and Accident Law}, 63 HARV. L. REV. 769, 770-71 (1950); 17 NACCA L.J. 204, 208-09 (1956).


\textsuperscript{58} Such explosions are the result of such things as excess pressure and a weakened boiler. Dr. Goldberg stated that he could not imagine an explosion of a boiler that was not the result of someone's negligence. \textit{GOLDBERG INTERVIEW}. 
Another of these areas involves X-ray burn cases. Early cases treated an X-ray burn as evidence of negligence, and held that *res ipsa loquitur* was applicable where a burn followed an X-ray treatment. The trend of authority has been away from use of the doctrine in these cases, though it is still occasionally met. *Lewis v. Casenburg* and *Nance v. Hitch* present a striking contrast in the use of expert testimony in this area. In the *Lewis* case, expert radiologists testified that there was no justification for the plaintiff's X-ray burn which followed three treatments by the defendant; they were of the opinion that it was not likely that the burn was due to an idiosyncracy of the patient. *Res ipsa loquitur* was held applicable. On the other hand, *res ipsa* was held inappropriate in the *Nance* case following expert testimony to the effect that an X-ray burn such as that suffered by the plaintiff might occur notwithstanding the fact that the physician practiced the highest possible degree of skill and caution. These cases might be distinguishable on their facts; it is also possible that knowledge of X-ray treatments progressed in the twenty-five year period between the two cases to cause a change in scientific theories regarding such burns. In any case, they demonstrate the need for expert testimony and the danger in relying on a general rule regarding *res ipsa loquitur* in a given area.

Cases involving airplanes and other instrumentalities of air travel have also yielded inconsistent results in terms of the applicability of *res ipsa loquitur*. Much of this confusion, especially in the earlier aviation cases, reflected the lack of knowledge and statistics regarding this relatively new form of transportation. However, there is now a body of statistics and scientific knowledge which might be introduced in a par-

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60. Prosser, *op. cit. supra* note 59, § 42 at 211 n.86; Comment, 40 Colum. L. Rev. 161, 164 (1940); 57 A.L.R. 268 (1928) (cases cited therein).
62. 157 Tenn. 187, 7 S.W.2d 808 (1928).
63. 238 N.C. 1, 76 S.E.2d 461 (1953).
64. In the *Lewis* case, expert testimony established that the burn occurred in a locality less likely to be burned than other parts of the body. It was also pointed out that the burn followed the third treatment, and that if it had been due to an idiosyncracy of the patient, it probably would have occurred sooner.
65. But see discussion in Annot., 57 A.L.R. 268 (1928) (same year as *Lewis*).
67. The earliest aviation cases regarded this form of transportation as inherently dangerous, and fastened absolute liability upon the aeronaut for all damages caused by this instrumentality. This trend was only short-lived, however, and aviation accidents are now governed by the theory of liability based on fault. See Goldin, *supra* note 66, at 16, 127-28.
ticular case to determine the applicability of the doctrine. Statistics indicate that the causal factors of air accidents are divided about evenly between human factors and such things as equipment, weather, and terrain. Thus, it would seem that the applicability of res ipsa loquitur to aviation cases should be determined case-by-case, rather than by attempting to formulate a general rule. In fact, this seems to be the approach of the courts, but here again they are often asked to apply or reject the doctrine without the introduction of any informed testimony. Occasionally, however, expert testimony has been used. In Deojay v. Lyford, defendant's plane swerved off the hard surface of the runway upon which it was landing, striking and killing plaintiff's intestate. A verdict for the plaintiff on the basis of res ipsa loquitur was reversed, the court relying on the testimony of an experienced aviator that it was quite common for an airplane in the process of landing to swerve in such a manner.

One of the most dramatic series of cases involving the applicability of res ipsa loquitur is that of suits against bottlers for injuries resulting from the explosion of a bottle containing a carbonated beverage. Some courts refuse to apply the doctrine in any case of this nature, many of them basing this conclusion on the theory that the defendant bottler was not in control of the container at the time of the accident. On the other hand, a growing number of courts apply res ipsa to bursting bottle cases when the plaintiff produces sufficient evidence that the bottle was carefully

69. Prosser, op. cit. supra note 68, § 42 at 203; Goldin, supra note 66, at 31; see also Smith v. Whitley, 223 N.C. 534, 535, 27 S.E.2d 442, 443 (1943).

70. See CAB, BUREAU OF SAFETY, ACCIDENTS IN UNITED STATES CIVIL AIR CARRIER AND GENERAL AVIATION OPERATIONS, CALENDAR YEAR 1956, at 23-49 (1957); CAA, GENERAL AVIATION ACCIDENTS (NON-AIR CARRIER), CALENDAR YEAR 1956, at 12-16 (1957). These figures may be distorted by the fact that there may be more than a single causal factor included for one accident. CAB, op. cit. supra at 24.

71. 139 Me. 234, 29 A.2d 111 (1942).


It has generally been stated that in order for the doctrine of res ipsa loquitur to be applicable, the instrument causing the injury must be under the exclusive control of the defendant. 2 HARPER & JAMES § 19.5; MORGAN at 133; Prosser, op. cit. supra note 68, § 42 at 199; Annot., 169 A.L.R. 953 (1947). This has confused some courts into refusing to apply the doctrine because control was not literally in the hands of the defendant at the time of the accident. See Prosser, op. cit. supra note 68, § 42 at 205. The better view seems to be that it is sufficient that the defendant had control at the time that the alleged negligence occurred; this serves to satisfy the rationale of the control requirement that the negligence of which the thing speaks is that of the defendant and not of another. 2 HARPER & JAMES §§ 19.7-8; Prosser, op. cit. supra note 68, § 42 at 205.

73. For the degree of evidence necessary to satisfy this requirement, see Annot., 4 A.L.R.2d 467, 472-79 (1949). See also Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 458, 150 P.2d 436, 439 (1944): "It is not necessary, of course, that plaintiff eliminate every remote possibility of injury to the bottle after defendant lost control, and the requirement is satisfied if there is evidence permitting a reasonable inference that it was not accessible to extraneous harmful forces and that it was carefully handled by plaintiff or any third person who may have moved or touched it."
handled by all persons into whose hands it passed subsequent to the bottler, and that it was subject to no unusual temperature change after it left his physical control. The position of these courts does not seem to be based upon any scientific or statistical study; instead, they seem content to rest on whatever inference a lay person might draw from such an occurrence. A few courts that have rejected the doctrine in bottle cases have pointed out the lack of expert testimony regarding the cause of the bottle's explosion; but for the most part, the courts that have refused to apply the doctrine have also done so on their own theories of what could cause such a result.

In a jurisdiction applying res ipsa, the plaintiff typically submits evidence that the explosion occurred, and attempts to prove that the bottle was carefully handled after it left the bottler's hands; usually, he stops at this point. The defendant generally rebuts by showing that his bottling methods are safe, and that the bottles that he uses are of sufficient strength to withstand an explosion from internal pressure unless grossly mishandled; experts are sometimes used by defendants to establish these points. But defendant's evidence is typically held to be for the trier of fact rather than for the court to consider, and the plaintiff is given the advantage of getting the case to a sympathetic jury.

Courts that apply res ipsa loquitur to a bursting bottle case, provided the plaintiff demonstrates that all persons handling the bottle after it left the bottler's control did so carefully, proceed on the assumption that the accident must have been caused by someone's negligence. If the negligence of all other possible tortfeasors is negated, they reason, then the bottler must have been negligent. This posits that defects in the bottle or in the


A third theory allows the question of defendant's negligence to be submitted to the jury when the plaintiff is able to show substantially similar explosions of defendant's bottled beverage at times proximate to the accident in question. Winfree v. Coca-Cola Bottling Works, 19 Tenn. App. 144, 83 S.W.2d 903 (1935); see Annot., 4 A.L.R.2d 467, 468 (1949).

75. See Comment, 1 Vand. L. Rev. 155, 156 (1947).


79. See, e.g., Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 461, 150 P.2d 436, 440 (1944); Johnson v. Coca-Cola Bottling Co., 63 So. 2d 459, 462-63 (La. Ct. App. 1953) (“However, despite all of the testimony of Wright and Dr. Fryer, the fact remains that the bottle did explode and destroy one of plaintiff's eyes.”).

bottling process \textsuperscript{81} must be discoverable or preventable by feasible means; \textsuperscript{82} otherwise there is no rational ground for fault liability.\textsuperscript{83} It is at this point that expert assistance would appear most desirable. Thus it would be helpful for the court to know what reasonable and practical tests are available to the bottler for testing his product before putting it on the market \textsuperscript{84} and how much these tests would reveal.\textsuperscript{85} Some courts have themselves suggested tests, the practicality of which should be evaluated.\textsuperscript{86} Judging by the few instances in the cases in which experts have explored these questions,\textsuperscript{87} a fertile field for expert testimony appears open.\textsuperscript{88}

\textsuperscript{81} Defective bottles and excessive carbonation, in that order, appear to be the two principle causes of bottle explosions. See Meyers v. Alexandria Coca-Cola Bottling Co., 8 So. 2d 737, 739 (La. Ct. App. 1942); Soter v. Griesedieck Western Brewing Co., 200 Okla. 302, 304, 193 P.2d 575, 577 (1948); \textbf{GOLDBERG INTERVIEW}; Comment, 2 \textit{VILLANOVA L. REV.} 551, 557 (1957).

\textsuperscript{82} \textit{But see} Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 460, 150 P.2d 436, 439 (1944).

\textsuperscript{83} Comment, 2 \textit{VILLANOVA L. REV.} 551, 556-57 (1957).

\textsuperscript{84} Due care requires that the defendant-bottler subject the bottles to such reasonable and practical tests as are available to him. \textit{Ibid.} See Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 459-60, 150 P.2d 436, 439 (1944); Comment, 1 \textit{VAND. L. REV.} 155, 156 (1947).

\textsuperscript{85} Though not conclusive, evidence of machinery, methods and processes accepted as standard in the trade would be helpful in establishing what these tests should be. Comment, 2 \textit{VILLANOVA L. REV.} 551, 556-57 (1957). A tour of the C. Schmidt & Sons Brewery, Philadelphia, Pa., Nov. 25, 1957, conducted by John McGrath, Assistant to the Vice-President in charge of Production, revealed at least ten points at which a defective bottle might be detected. In addition to visual inspection under strong light at the time the bottles enter the plant, after they are cleaned, and prior to being packed in cases, bottles are also inspected by machine or visually following the pasteurization process. Also, there are several other stages at which a defective bottle is likely to be detected. The bottles are washed upon entering the plant at high temperatures with caustic soda; this has caused weak bottles to fall apart. In the filling process, the valve is constructed in such a manner that it will not operate if the bottle is unable to hold air due to a crack or chip at the neck of the vessel. The extreme heat and pressure connected with the pasteurization process would change a defective bottle to break. The filled bottles are also treated roughly at three points, where a defective bottle which had gotten that far would presumably break. The bottles are dropped a distance of one foot in the process of being loaded into cases. The cases are arranged mechanically for shipment (palletization), and, finally, the pallets are trucked down a ramp for a distance of four feet in the process of being loaded for shipment. According to Mr. McGrath, "A defective bottle just wouldn't get this far." See also Letter from C. Schmidt & Sons, Inc. to the University of Pennsylvania Law Review, Nov. 4, 1957, on file in the Biddle Law Library (hereinafter cited as \textit{SCHMIDT LETTER}).

\textsuperscript{86} See Comment, 1 \textit{VAND. L. REV.} 155, 156 (1947). Many otherwise invisible stresses and strains in glass can be detected under polaroid light. \textbf{GOLDBERG INTERVIEW}. Some courts have suggested that this method of inspection must be used by a reasonably prudent bottler. However, it is questionable whether this method of testing is practical for the large scale bottler. \textbf{GOLDBERG INTERVIEW}; \textit{SCHMIDT LETTER}. See Felton, J., dissenting in Macon Coca-Cola Bottling Co. v. Crane, 55 Ga. App. 573, 574, 190 S.E. 879, 895 (1937): "To expect 100 per cent perfection in such mass manufacture of bottles is to expect a miracle, and to expect a bottler to detect a weakness in a bottle caused by the rough treatment and other weakening processes, by methods outside and beyond what was shown to have been done in this case, is to require an unreasonable and maybe a prohibitive task. The defendant is not an insurer of the bottle." \textit{But see} Gordon v. Aztec Brewing Co., 33 Cal. 2d 514, 517, 203 P.2d 522, 524 (1949); Hoffing v. Coca-Cola Bottling Co., 87 Cal. App. 2d 371, 373, 197 P.2d 56, 57 (1948) (experts testified that "polariscop testing was used by bottlers).


\textsuperscript{88} A few judges have indicated that a bottler should be subject to an absolute liability as an insurer against his product's exploding. See Traynor, J., concurring in
EXPERT EVIDENCE AND RES IPSA LOQUITUR

The Use of Expert Evidence of Specific Care or Negligence Where Res Ipsa Loquitur Would Ordinarily Be Applicable

The use of experts in a res ipsa case is not restricted to establishing that the doctrine should or should not apply. Even though the fact of the accident suffices to invoke the doctrine, without more the plaintiff can seldom, if ever, expect a verdict to be directed in his favor. Both parties still face the task of convincing the jury to render a favorable verdict. Moreover, there is always the chance that the court will refuse to apply res ipsa, feeling that there is insufficient evidence of defendant's negligence in the particular case, even though the type of accident that has occurred would as a rule speak of negligence. Thus, it may be desirable for the plaintiff, and is a necessity for the defendant, to introduce specific evidence of care or the lack of it in a case ordinarily calling for the application of res ipsa loquitur. This may well be in the form of expert evidence.

Use of Specific Expert Evidence by the Plaintiff

There are two reasons why a plaintiff may desire to use expert evidence of specific acts of negligence on the part of the defendant in a res ipsa loquitur case. Both stem from the fact that although the accident's occurrence may constitute circumstantial evidence of defendant's negligence, the inference may not be strong in the particular case. The plaintiff may wish to introduce evidence of specific negligent acts to strengthen the inference in order to convince the court that res ipsa loquitur is properly applicable. This is particularly desirable where there is no res ipsa precedent in the jurisdiction in the type of case involved. The second reason for introducing evidence of specific acts of negligence is that even though the court will invoke the doctrine, such evidence may help to convince the jury of the defendant's negligence.

Unfortunately, however, this course exposes plaintiff to a possible pitfall. Although it is doubtful that it is a clear rule in any jurisdiction, there are dicta and holdings to the effect that a plaintiff who introduces evidence of specific negligence on the defendant's part cannot avail himself of the doctrine of res ipsa loquitur. Two similar cases emphasize the

Escola Coca-Cola Bottling Co., 24 Cal. 2d 453, 461, 150 P.2d 436, 440 (1944). This was at one time the law in Missouri. Stolle v. Anheuser-Busch, Inc., 307 Mo. 520, 271 S.W. 497 (1927). But this doctrine was repudiated in Maybach v. Falstaff Brewing Corp., 359 Mo. 446, 222 S.W.2d 87 (1949). Yet, it is probable that res ipsa has been applied in at least some of these cases primarily as a result of a feeling on the part of the judges that a bottler whose product has caused an injury should lose at least some of the defendant's normal procedural advantages. See Prosser, Res Ipsa Loquitur in California, 37 Calif. L. Rev. 183, 224 (1949).

89. Morris at 135-36.
90. See note 11 supra.

This reluctance of the courts to permit plaintiff to avail himself of the doctrine of res ipsa loquitur once he has introduced specific evidence of defendant's negligence
point. In Killian v. Logan,\textsuperscript{92} res ipsa loquitur was held applicable where plaintiff sustained injuries as a result of a malfunctioning fire escape; no direct evidence was offered by the plaintiff as to the condition of the apparatus.\textsuperscript{93} In Francisco v. Miller,\textsuperscript{94} the doctrine was held inapplicable in an almost identical factual situation after the plaintiff introduced expert testimony that the structure had been weakened by corrosion.\textsuperscript{95}

This limitation of res ipsa loquitur has been justifiably criticized, for it would seem that specific evidence of defendant's fault is not necessarily inconsistent with the doctrine. As long as the specific evidence merely narrows the range of possible negligent acts, leaving an inference of negligence still to be drawn in support of the specific proof, such evidence supplements rather than supplants the doctrine.\textsuperscript{96} In addition, courts have occasionally refused to apply res ipsa on the theory that sufficient expert testimony of defendant's negligence was available and should have been used by plaintiff. For example, where the motor of plaintiff's car exploded after he used defendant's product "Motor-Tune-Up" according to directions, the court refused to invoke the doctrine, stating that plaintiff should have procured a chemical analysis of the product and produced the results before the court.\textsuperscript{97} The court also noted plaintiff's failure to introduce testimony describing the condition of the motor after the explosion. In Bishop v. Brown,\textsuperscript{98} the court refused to apply res ipsa in a bursting boiler case on the grounds that plaintiff should have submitted the fragments of the boiler to tests of tensility and ductility and that the accident alone was insufficient to indicate that defendant was negligent.\textsuperscript{99}

There are, of course, many cases in which the plaintiff has been permitted to avail himself of both res ipsa loquitur and expert testimony of defendant's specific acts of negligence,\textsuperscript{100} at least where the evidence does has a dual basis. Some courts justify the reluctance on the ground of waiver or estoppel. Others state that res ipsa loquitur is a doctrine to be used only when absolutely necessary, and that proof of defendant's specific acts of negligence ends that necessity. Cases cited in Annot., 33 A.L.R.2d 791 (1954).

It is clear that res ipsa loquitur cannot be applied when the evidence in the case clearly and positively reveals all the facts and circumstances surrounding the occurrence and definitely establishes the precise cause of the plaintiff's injury. Ibid. See also 9 Brooklyn L. Rev. 335 (1940).

\textsuperscript{92} 115 Conn. 437, 162 Atl. 30 (1932).
\textsuperscript{93} Id. at 440, 162 Atl. at 32.
\textsuperscript{95} Id. at 294, 81 A.2d at 805; Brief for Appellant, id. at p. 3. It should be noted, however, that the doctrine of res ipsa loquitur may have been inapplicable due to defendant's lack of control. Defendant had just taken control of the premises from a prior owner when the accident occurred. See note 72 supra.
\textsuperscript{96} See Prosser, Torts § 43, at 211 (2d ed. 1955); Annot., 33 A.L.R.2d 791, 795 (1954).
\textsuperscript{97} Kramer v. R. M. Hollingshead Corp., 5 N.J. 386, 75 A.2d 861 (1950). The decision also rested upon lack of control on the part of defendant.
\textsuperscript{98} 14 Colo. App. 535, 61 Pac. 50 (1900).
\textsuperscript{99} Id. at 543-45, 61 Pac. at 53-55.
not show so precisely the cause of injury as to leave no inference to be drawn. Thus in several bursting bottle cases successful plaintiffs relied both upon the doctrine and evidence that there were feasible tests of inspection which defendant failed to utilize. In *Lewis v. Casenburg* the testimony of a roentgenologist to the effect that defendant did not exercise due care when he failed to examine plaintiff before exposing him to X-ray treatments from which the latter suffered burns helped to support a verdict based partially upon *res ipsa loquitur*.

Since the decisions even in a single state may be inconsistent, it would seem that a plaintiff would best refrain from introducing specific evidence of defendant’s negligence where the inference raised by the *res ipsa loquitur* doctrine is strong. On the other hand, where the doctrine presents at best a shaky inference of negligence to judge or jury, and specific evidence of defendant’s negligence is strong, defendant might be well advised to introduce the latter evidence even at the risk of losing the benefit of *res ipsa*.

### Use of Specific Expert Evidence by the Defendant

Even though defendant is unable to rebut the general proposition that an accident such as has occurred is ordinarily the product of negligence, he may be able to produce expert proof that the occurrence in this instance could not have resulted from his lack of due care. Occasionally, such evidence may be so strong as to warrant a directed verdict; even if it fails to do so, it still may forestall an unfavorable verdict. Or it may lead the court to refuse to submit the case to the jury under the *res ipsa* doctrine.

Defendant may sometimes attempt to prove through experts that he exercised due care in constructing, maintaining, or operating the instrumentality which caused the accident. Such evidence seldom is sufficient to overcome the inference of fault, and has the added disadvantage that it may, by indicating possible causes of the occurrence, make the jury wonder why proper precautions were in fact not taken in the case at hand, since although potential causes of the accident were known, it nonetheless did occur.

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101. See note 91 *supra*.


103. 157 Tenn. 187, 7 S.W.2d 808 (1928).


However, defendant’s specific evidence may be effectively directed at proving one of two propositions: (1) that this particular accident was not the fault of anyone, or (2) that the accident was due to the negligence of some third party. In the first instance, defendant may prove lack of negligence on his own part through expert evidence that the accident was due to an undiscoverable or unavoidable mechanical defect. Thus, in *Banner Laundry Co. v. Great Eastern Cas. Co.*, the court was able to avoid ruling upon the applicability of *res ipsa loquitur* in a bursting boiler case, but instead directed a verdict for plaintiffs on the basis of expert proof that the explosion was due to a bent safety valve and could not have been foreseen nor prevented. Similarly, in *La Porte v. Houston*, *res ipsa loquitur* was held inapplicable when defendant-mechanic introduced expert testimony that the car he was working on, and which suddenly lurched forward and injured plaintiff-owner, may have done so as a result of a mechanical defect.

Defendant might also use expert evidence to prove that the accident was the result of the negligence of some other person. Thus, in *Redmond v. Ouachita Coca-Cola Bottling Co.*, the trial court’s application of *res ipsa loquitur* was reversed, the defendant having introduced testimony of a professor of chemical engineering, a graduate chemist, and a professor of physics, to the effect that the fracture pattern of the bottle that injured plaintiff indicated that it broke due to some external impact and not as the result of internal pressure.

Finally, there are some instances in which the courts appear to have used *res ipsa loquitur* as a deliberate instrument of policy to place the defendant in the position of being virtually an insurer. In these cases, defendant’s expert testimony may have some value in influencing the jury to return a smaller award of damages.

**CONCLUSION**

Although grounded in common sense, the doctrine of *res ipsa loquitur* has sometimes been abused by judges who have been guided by their own predilections, not based upon scientific fact, in determining the applicability

109. 148 Minn. 29, 180 N.W. 997 (1921).
110. See text and note at note 57 supra.
111. *Res ipsa loquitur* was raised by defendant insurance company by way of a defense to an action by the insureds on a glass policy. The glass was shattered by the explosion, but the policy excluded losses caused by the negligence of the insured.
112. 148 Minn. at 32-33, 180 N.W. at 998-99.
113. 33 Cal. 2d 167, 199 P.2d 665 (1948).
114. * Accord*, Genero v. Ewing, 176 Wash. 78, 28 P.2d 116 (1934) (runaway plane; expert testimony that defendant used due care, and that accident was due to an unforeseeable mechanical defect); see also Kramer v. R. M. Hollingshead Corp., 5 N.J. 386, 75 A.2d 861 (1950) (expert evidence that defendant’s solvent which allegedly caused an explosion was subsequently tested and found to be harmless).
116. Such proof may be difficult to obtain. See Comment, 2 *Villanova L. Rev.* 551, 559 (1957).
117. See Prosser, *supra* note 104, at 224. For a discussion of such instances in the bursting bottle situation, see note 88 *supra*. 
of the doctrine. With the increased accuracy of scientific and statistical research, which has been a product of the technological advances of the past few decades, the time has come to modernize trial methods in *res ipsa loquitur* cases. Expert evidence in many fields can be used advantageously by the plaintiff to convince the court that the thing really does speak for itself, and hence that the doctrine of *res ipsa loquitur* should be applied. Or the plaintiff might profitably produce expert testimony of specific acts of defendant's negligence to reinforce the *res ipsa* doctrine, although this course of action poses the danger that the doctrine may be held not to be applicable.118 Conversely, a defendant confronted with a *res ipsa loquitur* case might introduce expert evidence to show that an occurrence such as that upon which plaintiff's suit is based is not necessarily indicative of negligence on the part of anyone. Where the situation so warrants, the defendant might also introduce scientific, statistical, or other expert testimony of his own due care. Evidence of this nature might be directed primarily at convincing the judge that the doctrine should or should not apply; once *res ipsa* is invoked such evidence will also help the trier of facts determine whether or not the defendant was negligent in the particular case. Where *res ipsa* is rejected, if the case should nonetheless reach the jury on some other ground, expert evidence of specific acts of care or negligence on the part of defendant will have a similar effect.

Some advocates and courts have recognized the need for a more scientific approach to *res ipsa loquitur* cases, and have adjusted to it. Unfortunately, these cases illustrate the exception rather than the rule. It is to be hoped, however, that other courts will follow their enlightened lead.

B. I. B.

118. See text at note 92 supra.