



THE

CONSULTANTS

PERSPECTIVE

A SUGAR PUBLICATION

FORENSIC ENGINEERING AND EXPERT WITNESS SERVICES

SPRING 2003

PROPERTY/CASUALTY EDITION

SUBROGATING A HEAVY MACHINERY FIRE LOSS

by
Arthur V. Shaheen, Esq.
Shaheen & Shaheen, P. C.
Richmond, Virginia

In conjunction with Walter S. Laird, P. E., lead engineer with Forcon International in Richmond, Virginia, I recently concluded a breach of warranty case against Caterpillar, Inc. The property damage claim, which was hotly contested in the U. S. District Court in the Eastern District of Virginia, involved a 615C Elevating Scraper Tractor (also known as a "pan"). The tractor had been purchased by a construction contractor only three months before a fire which essentially destroyed it. I represented the Plaintiff, an insurance company, who paid the construction contractor for its losses and who then became subrogated to its claim, if any, against Caterpillar. Involving a complex mixture of engineering and legal issues, the case was resolved in April, 2003, only five days before trial.

Case History

My client retained Laird on the day of the fire to conduct a cause and origin examination. The operator of the tractor told Laird that right before the fire, he was still scraping dirt and that the "bowl" which holds the dirt was nearly full. He heard a "pop" and then observed a "mist" of hydraulic fluid. Thereafter he saw a "ball of fire" emanating from the middle of the engine. When the fire department arrived, the engine portion of the machinery was completely engulfed by the fire and the damage was done.

Using cause and origin methodology set forth in National

Fire Protection Association (NFPA), Laird opined that the origin of the fire was the turbo-charger in the center of the engine which had come into contact with atomized hydraulic fluid. Laird had also observed a steel hydraulic line with a fish-mouth opening in the area where the operator stated that he saw the mist of oil. Laird did not find any other ruptured steel lines, although he did find a number of ruptured rubber hydraulic hoses.

Laird and the tractor's operator traced the steel hydraulic line through the hydraulic system and discovered that the steel line would have been under maximum hydraulic pressure (roughly 2500 psi) right before the fire. Laird also discovered that there was a direct and unobstructed pathway from the steel line rupture to the interior of the tractor's engine, such that the atomized hydraulic fluid could have made contact with the hot turbo charger in the middle of the engine roughly three feet away. Laird took possession of the subject hydraulic line and analyzed it.

Preliminary Opinion

Based upon his investigation, Laird expressed a preliminary opinion that because of a defective seam in the weld of the steel hydraulic line, it suddenly ruptured (thus the "pop"), and pressurized hydraulic fluid sprayed (or created a "mist") onto the turbo charger causing the fire. The opinion – as well as a legal demand for payment – was conveyed to Caterpillar through appropriate channels, but Caterpillar was not in the mood to bite. Rather, they sent their own expert, Charles Grawey, from Peoria, Illinois to Richmond to perform their own investigation. Grawey, formerly Caterpillar's head of research and personally responsible for over fifty patents, including those relating to hydraulic tubing and machine design, was now retired from Caterpillar (after 45 years) and acting as a consultant/expert (primarily for Caterpillar and its affiliates).

Caterpillar's Expert

I myself observed Grawey during one of the inspections he conducted jointly with Laird and was impressed with his ability to combine grandfatherly humility, charm and humor with technical fluency. Later, when I deposed Grawey in Caterpillar's home town, Peoria, Illinois, I feared that the jury might find against us simply because they would not want to rule against Grawey. And Grawey was not buying Laird's theory. Grawey challenged Laird's understanding of the tractor, accused him of failing to account for a number of cause and origin variables, and concluded that the fire could not have happened as Laird theorized. For example, Grawey argued that even if there had been a sudden rupture of the steel hydraulic line (which rupture he stated was caused by the fire), there would not have been enough pressure to carry the fluid to the



turbocharger, particularly in light of the resistance created by the wind of a radiator fan.

Instead, Grawey argued, the fire started as a result of the existence of debris near the electrical system of the tractor. He argued that the debris, probably twigs (which he found some evidence of), came into contact with degraded or compromised battery cables starting a fire that was accelerated and spread by two events: 1) the flow of hydraulic fluid caused by the melting away of two rubber hydraulic hoses that were near the fire's inception point, and 2) the explosion of a nearby ether can. The ether can's explosion, Grawey suggested, explained why the operator heard a "pop." The theory advanced by Caterpillar did not presumably make them responsible for payment under their warranty.

The battle of the experts was well underway. Both experts conducted additional tests: Laird, who was up for the challenge, performed testing on exemplar tractors at the insured's premises in Richmond, including a test that demonstrated that there was enough pressure to carry the fluid to the turbo-charger in spite of the resistance caused by the radiator fan. Grawey performed testing at Caterpillar's "proving grounds" in Peoria. Both Caterpillar and my client expended much in the way of resources to prove their respective points. Caterpillar vigorously defended its product. My client was not deterred.

Legal Battlefield

On the legal front, Caterpillar's counsel challenged Laird's qualifications and theories by the use of a Daubert challenge. Under Daubert analysis, the Court, acting as a "gatekeeper," will not allow the jury to hear expert witness testimony that is not sufficiently reliable. If Caterpillar won the Daubert motion, the case would be over since Laird was our only liability expert. While my client, based upon my reports, felt very comfortable with Laird's qualifications and opinions, and while our legal brief was well-written, we did not know what to expect from a brand new federal judge, Judge Hudson, who had been on the bench for less than six months.

Moreover, Caterpillar wished to introduce two other items of evidence that we believed were irrelevant to the issues in the case, but that if allowed in would prejudice our case before the jury. First, they wanted to introduce testimony that there had been no other reported incidents of fire, as we had alleged, in other Caterpillar earthmoving equipment. Secondly, Caterpillar wanted to introduce testimony that the "Plaintiff" was in fact an insurance company (we sued under the insured's name pursuant to Virginia subrogation law) and that the 1st party claim had already been paid. We filed pre-trial motions to prevent these types of evidence.

The lawyers extensively briefed the issues and a hearing was held in federal court two weeks before trial. As to the Daubert challenge, the Court essentially stated that it was "impressed" with Laird's qualifications and that Caterpillar would have to argue about Laird's qualifications and opinions to the Jury; the Court would not preclude his testimony under Daubert. As to the evidence of the "absence of other accidents," the Court ruled that that type of evidence would be precluded. The Court agreed with us that 4th U. S. Circuit Court of Appeals case law makes a distinction between design and failure to warn cases and defect cases. In design and failure to warn cases, it might be relevant that other instances of failure had not occurred. In defect cases such as ours, it was not relevant.

The Court turned to the insurance issue. Notwithstanding the general rule of exclusion of evidence of insurance in tort actions (see for example Rule 411 of the Federal Rules of Evidence) there

was recent Virginia Supreme Court precedent that permitted the introduction of evidence of insurance to show bias of a witness, particularly an expert witness. However, the proponent of the evidence must be able to show that the (expert) witness had a "substantial relationship" with the insurer, either by way of number of cases referred or the amount of fees earned. However, Judge Hudson found that no such substantial relationship existed between Laird or Forcon and my client/insurer and forbade the mention of insurance and/or subrogation at trial.

Conclusion

These rulings ultimately coaxed Caterpillar to the negotiating table. Within five days of trial, the case settled for 77% of the stipulated damages.

In terms of products liability cases, it was one of the most interesting that I have handled. Among the more critical components of successful recovery, in my opinion, included:

- *The early retention of the expert.* Important interviews were conducted and evidence was preserved. Laird's professional credibility was enhanced from having been at the scene of the fire on the day it happened, well before the evidence was compromised.
- *Selection of the right expert witness.* Laird's credentials made a big difference. He is not only as a mechanical and materials engineer, but also a certified cause and origin investigator. Additionally, Laird was a good communicator, responded well to the Plaintiff's needs during the litigation, and was accessible.
- *Persistence & Hard work.* Litigation in the U. S. District Court for the Eastern District of Virginia is demanding, fast-paced, hard work. The whole team, including my client, the insured, the insured's employees, Laird, and other participants, were motivated and conscientious and I think it made a big difference.

ABOUT THE AUTHOR

Arthur V. Shaheen is a principal with the Virginia law firm of Shaheen & Shaheen, P. C., 8890 Three Chopt Road, Richmond, Virginia 23229 (DD: 804-474-9401; E - m a i l : artshaheen@shaheenlaw.com). He concentrates in cases involving products liability, fire losses, medical negligence, motor vehicles, personal injury, and insurance/subrogation. He is a member of the Virginia State Bar (Council, 1997-2003; Client Protection Fund Board 2002-2003), the Henrico County Bar Association (Director 2001-2003), the Virginia Trial Lawyers Association (VTLA), the American Trial Lawyers Association (ATLA), and the National Association of Subrogation Professionals (NASP). First licensed in 1988, he is currently licensed to practice in the 4th U. S. Circuit Court of Appeals, the Eastern & Western District Federal Courts of Virginia, the Virginia Supreme Court, and all local courts. He is married and has two daughters.



CONSULTANT PROFILE

John Leffler, P.E., C.F.E.I.

- Consumer Product, Machine, and Automotive expert -

John is a mechanical engineer educated at Georgia Tech. His engineering expertise is in design and manufacturing of various consumer products including power tools, gears, and simulators. Prior to obtaining his engineering degree he was a mechanic, fabricator, and machinist on race cars where he gained extensive fabrication, machining, welding, and overall vehicle mechanical experience. John recently became a Certified Fire and Explosion Investigator to better qualify him as a vehicle fire cause and origin investigator.



John's full resume is available on our website at [www.forcon.com/GA map.htm](http://www.forcon.com/GA_map.htm) or by calling 800-390-0980.

FORCON's Areas of Expertise

- | | |
|---------------------------------|------------------------------|
| Accident Reconstruction | Architecture |
| Automotive Fires & Failures | Boat Accident Reconstruction |
| Catastrophe Engineering Support | Chemical Engineering |
| Chemistry | Civil Engineering |
| Codes & Standards | Construction |
| Electrical Engineering | Electronics |
| Geology | Geotechnical Engineering |
| Injury Causation | Materials Engineering |
| Marine Engineering | Mechanical Engineering |
| Metallurgy | Roofing |
| Safety/OSHA | Structural Engineering |
| Traffic Engineering | |

PROPERTY / CASUALTY ASSIGNMENT HOTLINE

1-800-390-0980

OR ASSIGN IT ON LINE AT

www.forcon.com/pcwrf.htm

ACCIDENT RECONSTRUCTION ASSIGNMENT HOTLINE

1-800-877-3260

E-Mail Us at

- (Tampa) jjholland@forcon.com
- (Atlanta) Bvereecke@forcon.com
- (Virginia) hlaire@forcon.com

- Michael Romansky's presentation on Same Level Fall Investigations Using Forensic Biomechanics has become quite popular. So far this year he has given the presentation to the National Restaurant Association Risk and Safety Managers Executive Study Group Meeting Winter 2003, Orlando, FL; Shoney's Defense Team Meeting, corporate offices, Nashville, TN; Penn National Insurance's, Nashville, Tennessee office; the Virginia Association of Defense Attorney's annual conference; and the FCCI Insurance Group Loss Prevention/Safety Spring Conference, corporate offices, Sarasota, FL. He is scheduled to present it to the Alabama Defense Attorney's and Georgia Defense Attorney's annual conferences, and a program sponsored by Marsh for a number of their accounts who deal with same level fall claims.

In conjunction with this presentation, Michael has developed a detailed list of questions that should be asked and information that should be obtained from claimants/plaintiffs during recorded statements or depositions in these types of cases.

- Steve Chewing gave a presentation on traffic accident reconstruction at the annual PLRB conference in Orlando and at the 2003 Oklahoma Trucking Association Midwinter Conference & Trade Show, Oklahoma City, OK. He also participated in the Conroy, Simberg, Ganon, Krevans & Able 2003 Claim Management Seminars held in Ft. Lauderdale and Orlando. Steve served as the expert witness in a mock trial involving a van/tractor trailer collision, and gave a presentation on current accident reconstruction technology utilizing electronic collision data retrievable from GM cars and commercial trucks.
- Walt Laird of FORCON, attorney Arthur Shaheen of Shaheen and Shaheen, and Kenneth Gee of Virginia Mutual Insurance have been selected to make a presentation at the annual National Association of Subrogation Professionals Conference in November in Reno, Nevada. The topic will be "Interaction Between the Subrogation Professional and the Expert Witness - Pre Litigation and Trial". It will include a discussion of case studies one of which is the subject of the preceding article written by Arthur Shaheen.
- Wick Lyne recently made a presentation to the Lynchburg, Virginia Claims Association on the topic of An Engineers Perspective on Subrogation.
- Mike Pinion recently made a presentation to the Richmond, Virginia Claims Association on the topic of Lightning - A Few Things Ben Franklin Forgot to Mention.

MORE ARTICLES

If you are interested in obtaining other newsletter articles, you can call us at 800-390-0980, or visit our website at www.forcon.com where all past newsletter articles are available.

FORCON International Offices

- | | | | |
|--------------|----------------|---------------|----------------|
| Amherst, VA | (804) 946-0855 | Atlanta, GA | (770) 390-0980 |
| Avon, CT | (860) 674-8101 | Pentwater, MI | (231) 869-2017 |
| Raleigh, NC | (919) 847-0557 | Reno, NV | (775) 823-4900 |
| Richmond, VA | (804) 285-7870 | Tampa, FL | (813) 684-7686 |

FORCON INTERNATIONAL CORPORATION

PRESENTS

THE CONSULTANTS PERSPECTIVE

IN THIS ISSUE ! - AN ARTICLE ON

SUBROGATING A HEAVY MACHINERY FIRE LOSS

FORCON INTERNATIONAL CORP.
1216 Oakfield Drive
Brandon, Florida 33511