USE OF EXPERT WITNESSES IN ADMIRALTY PROCEEDINGS*

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I
INTRODUCTION

Maritime practitioners face potential hazards and critical decisions in their use of expert witness. Improper use of an expert can be fatal to a case. This paper reviews issues involved in the use of experts in litigation, with a focus on maritime law and the Federal Rules of Civil Procedure, as much maritime litigation occurs in federal court. Practical considerations for the practitioner area also discussed.

II
EXPERT WITNESSES FROM FRYE TO WEISGRAM

From 1923 to 1995, the federal court standard for admissibility of expert *scientific* testimony was that derived from the opinion of the United States Court of Appeals for the D.C. Circuit in *United States v. Frye.*[1] According to the court in *Frye*, for scientific opinion testimony to be admissible, it had to be based upon methodology and evidence that was generally accepted in the involved scientific community. The *Frye* test was most frequently used to resolve issues involving novel scientific evidence. The admissibility of all other types of expert testimony, including that proffered to resolve complex but not necessarily novel medical issues, turned essentially on the qualifications of the witness and the judgment of the trial court that the proffered expert evidence was relevant and would assist the jury in deciding the case. This standard was codified in 1972 with the enactment of Rule 702, which specifically includes "scientific" knowledge.[2]

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1 293 F.1013 (D.C. Cir. 1923).

2 According to Fed. R. Evid. 702, "If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact at issue, a witness qualified as an expert by *knowledge, skill, experience, training* or *education* may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of

Eventually, the Supreme Court of the United States granted writs of certiorari in *Daubert v. Merrell-Dow Pharmaceuticals, Inc.*,[3] because the circuit courts had come to disagree about the viability of the *Frye* test after enactment of Rule 702. The particular issue presented in *Daubert* was whether scientists could testify, on the basis of confirmatory animal studies, common chemical characteristics, and a re-analysis of epidemiological studies that reached contrary conclusions, that Bendectin caused birth defects. Employing the *Frye* test, the trial and appellate courts deemed the testimony inadmissible.

The Supreme Court reversed and remanded, after deciding that Rule 702 had supplanted the *Frye* test, which the Court found inconsistent with the "liberal intent" of that rule and the Federal Rules of Evidence in general. The High Court interpreted Rule 702 as requiring that an expert's scientific opinions be based on a solid scientific foundation and on sound scientific methodology that fit the issue at hand. Writing for the Court, Justice Blackmun observed that:

> "General acceptance" is not a necessary precondition to the admissibility of scientific evidence under Federal Rules of Evidence, but the Rules of Evidence—especially Rule 702—do assign the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand. Pertinent evidence based on scientifically valid principles will satisfy those demands.[4]

In *Daubert*, the United States Supreme Court anointed trial judges as gatekeepers to insure that *scientific* evidence is reliable and relevant. "Reliability" requires a determination of whether the underlying methodology and reasoning is scientifically valid; "relevance" is determined by the traditional Rule 401 analysis.[5] To assist the trial judge in assessing the reliability of proffered testimony by an expert, the Court offered five flexible guidelines, known as the "Daubert factors."[6] Otherwise, the trial judge is on his or her own in making a decision that is highly subjective.

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reliable principles and methods, and (3) the witness has applied the principles ad methods reliably to the facts of the case." (Emphasis added.)

[3] 509 U.S. 579 (1993).

[4] Id. at 598.

[5] "Relevant evidence" means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence. FRE 401.

[6] *Daubert*, 509 U.S. at 598.

Six years later, in *Kuhmo Tire co., Ltd. v. Carmichael*, the Supreme Court applied the *Daubert* procedure to the testimony of a non-scientific expert, conveying to bench and bar the message that it was apt for the testimony of experts of all sorts.[7] Now, regardless of subject area, the testimony of any witness presented as an expert gets the *Daubert* treatment as part of the application of Rule 702 analysis.[8] Not only must the methodology appear scientifically sound to the judge, but the expert's methodology must be demonstrably related to his conclusion. If the judge decides that there is too great an analytical gap between data and opinion (i.e., the two are connected only by conclusion ["ipse dixit"] of the expert), the opinion is not reliable.[9]

Each time an attorney considers hiring an expert, he or she must consider the expert's ability to withstand *Daubert* scrutiny by the particular judge assigned to the case. It follows that the decision to use an expert can be outcome determinative, particularly for the plaintiff, who ordinarily carries the burden of proof. Two years before *Daubert* analysis was expanded in *Kuhmo Tire* to apply to all testimony governed by Rule 702, the Supreme Court had decided that the gatekeeper's decision should not be disturbed on appeal absent abuse of discretion.[10]

The third wave of consequences from *Daubert* came in *Weisgram v. Marley Co.*[11] In that case, the Supreme Court affirmed the decision of a court of appeals reversing the gatekeeper's decision to allow expert testimony, and, as a result of the consequent loss of record evidence and inability to carry the burden of proof, granting judgment as a matter of law.[12] Acknowledging that a verdict winner who subsequently loses the evidence necessary to sustain an otherwise proper verdict can suffer dismissal, Justice Ginsberg wrote:

> Since *Daubert*, moreover, parties relying on expert evidence have had notice of the exacting standards of reliability such evidence must meet. It is implausible to suggest, post-*Daubert*, that parties will initially present less than their best expert

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7 526 U.S. 137(1999).

8 Id.

9 Id.

10 Gen. Elec. Co. v. Joiner, 533 U.S. 136 (1997).

11 528 U.S. 440 (2000).

12 Cf. Fed. R. Civ. Proc. 50.

> evidence in the expectation of a second chance
> should their first try fail.[13]

So, practitioners (particularly plaintiff's counsel) must chose their experts with an eye toward satisfying a presumed *Daubert* challenge before a strong-minded judge and knowing that reversal of the gatekeeper's decision may result in a win becoming a loss, with no recourse.

Where, in the typical case, defendants once contended themselves with meeting the opinions of plaintiff's experts with contrary opinions offered by their own witnesses as a matter of course, defendants now can pursue outright dismissal, either before trial or after a verdict loss. In jurisdictions where pre-trial deadlines do not allow for supplementing expert designations after a *Daubert* proceeding, loss of an expert can result in summary dismissal before trial.[14] The judge is not required to hold an evidentiary hearing in making this decision.

III
DAUBERT PROCEDURE IN MARITIME CASES

The following is a brief exemplar of maritime cases throughout the United States in which the *Daubert* procedure has been employed.

A. Second Circuit[15]

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[13] 528 U.S. at 455.

[14] See: Harris v. Honolulu Shipyard, Inc., 125 F. Supp. 2d 1020, 2000 AMC 1257 (D.C. HI 2000); Elwell v. Conair, Inc., 145 F. Supp. 2d 79 (D.C. MA 2001).

[15] Other relevant Second Circuit cases include Bachir v. Transoceanic Cable Ship Co., 98 Civ. 4625 (JFK), 2000 U.S. Dist. Lexis 16957 (S.D.N.Y. Nov. 22, 2000) [experienced psychiatrist can testify despite failure to adhere to established diagnostic criteria]; Reyes v. Delta Dallas Alpha Corp., 92 Civ. 4418 (AGS), 2000 U.S. Dist. Lexis 5668 (S.D.N.Y. May 2, 2000) [ship's master expert cannot testify where he relies only on common sense guidelines, can testify on areas relating to shipping industry standards of operational safety]; Silivanch v. Celebrity Cruises, Inc., 171 F. Supp. 2d 241 (S.D.N.Y. 2001) [non-treating clinical neurologist could testify about causal relationship between Legionnaires' Disease and brain damage where there was general agreement albeit uncertainty on relationship in scientific community, differential diagnosis not a legal prerequisite for proving causation, and case reports were relevant to causation opinion]; Sadler v. Moran Towing Corp., 204 F. Supp. 2d 695, 2002 AMC 2042 (S.D.N.Y. 2002) [vessel captain cannot testify on psychological effects of pulling cable from the water without assistance].

In *Brooks v. Outboard Marine Corp.*[16], plaintiff sued defendant manufacturer and others for amputation of his son's hand that was caught in an outboard motor propeller under the theory that the lack of a kill switch was a design defect that caused the accident or increase its severity. The plaintiff's expert concluded in a one page report that either a propeller guard or an emergency motor shutoff device known as a kill switch could have prevented the accident or lessened its severity. In support, the expert produced a videotape demonstrating a kill switch in operation. However, the videotape was not meant to simulate the actual accident. The expert had never seen the actual boat or motor either in person or in photographs, had never spoken to either of the vessel's passengers, was unaware of the dimensions of the boat and the placement of the seats in relation to the motor, did not know precisely what happened and where the boys were positioned at the time immediately preceding the accident and had never attempted to reconstruct the accident and test his theory. The district court exercised its vast discretion in determining that the expert's opinion was speculative and therefore unreliable.

The *Brooks* case exemplifies insurmountable analytical gap between data and opinion. The expert simply did not obtain necessary information and conduct tests under proper scientific controls. His inadequate data did not support his subjective conclusion. Had this expert done his homework, plaintiff may have prevailed.

B. Third Circuit

In *Exxon Corp. v. Halcon Shipping,*[17] an oil tanker owned and operated by Exxon was forced to run aground. Accompanying the oil tanker was a tugboat owned and operated by the defendant, and the tug engaged in a pushing operation in order to return the oil tanker to the shipping channel. Five years later, a 12-inch pipe buried in this location fractured and released 576,000 gallons of heating oil into the Arthur Kill, a body of water between Exxon's Elizabeth, New Jersey and Bayonne, New Jersey oil refineries. Exxon contended that the defendant's tugboat had struck the pipeline five years earlier, when she freed the stranded tanker. This initiating force allegedly contributed to the pipe's fatigue fracture, due to the undermining of the structural integrity of the pipe.

In support of this theory, Exxon sought to introduce into evidence the video tape of a computer simulated depicting the alleged movements of the tugboat during the pushing operation. After receiving evidence from a number of eyewitnesses aboard both vessels and two vessel captains with twenty-six years of experience in navigating vessels in the waters of the Arthur Kill, the court curtly rejected the videotape as being unreliable. It noted that "this is the type of exhibit that *Daubert v. Merrill-Dow Pharmaceuticals, Inc.*, had in mind when it designated the judge as the gatekeeper to

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[16] 234 F.3d 89 (2nd Cir. 2000).

[17] 1995 WL 20667 (D.N.J. Jan. 18, 1995).

eliminate junk science from the judicial arena."[18] Interestingly, the court supported its decision by citing a "compilation" of the various tugboat captain witnesses' opinions that "a tugboat just does not act in the manner depicted in the video."[19]

This opinion highlights an issue faced more frequently in the maritime arena then in other areas of the law. Halcon Shipping responded to Exxon's computer simulated videotape by calling tugboat captains with years of navigational experience in the vicinity of the casualty. Recall that Rule 702 is disjunctive: the expert's specialized knowledge can be through education, training *or* experience. In the area of vessel operations, experience often makes the best expert. Operations sometimes don't occur as planned, and ships sometimes don't behave at sea as anticipated. Weather and sea conditions often play a major role. In this situation, as *Halcon Shipping* proves, it is far better to have a well-experienced and local captain than a high-tech computer simulation, or even a live witness who relies solely on formal education, land-based training and computer models.

C. Fourth Circuit

In *Buckman v. Bombardier Corp.*,[20] the district court judge conducted an intensive *Daubert* analysis. Buckman, operator of a Sea-Doo recreational watercraft, brought a products liability action against its manufacturer to recover for injuries he sustained in a collision with another vessel. Plaintiff retained an expert who examined the Sea-Doo and conducted a comparative test using this craft and a very similar control vehicle. The test was designed to verify or corroborate—rather than to test— a hypothesis that a malfunctioning stop switch, combined with poor rudder and keel design and the lack of a built-in signaling device, rendered the Sea-Doo defective.[21]

The court addressed the alleged stop switch defect by applying all *Daubert* inquiries to the expert's comparative test. The court responded to the first *Daubert* factor (whether the expert's theory can be and has been tested) affirmatively, finding it a scientifically valid exercise of the use of controls and procedures, though the principle of

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[18] Id. at 23.

[19] Id. at 24.

[20] 893 F. Supp. 547 (E.D. N.C. 1995).

[21] This case was decided before *Kuhmo Tire*, and when the Fourth Circuit was not applying *Daubert* to non-scientific testimony. However, the plaintiff asserted that his expert's opinion was based on science and not on accident reconstruction.

the experiment was weak and based on an untested assumption.[22] However, when determining whether conditions utilized in the experiment were comparable to those existing at the time of the accident (i.e., a six-inch chop on the water), the court distinguished between a test conducted in a normal chop of Biscayne Bay, which reasonably estimated the accident conditions, and that conducted in the wake of a fifty-foot yacht in the Atlantic Ocean at Biscayne Bay, which did not reasonably recreate accident conditions.

The court then refused to apply *Daubert* factors two through four (peer review and testing standards) as inappropriate and incapable of determination through statistical calculation (rate of error). Thus, this court took a flexible (i.e. correct) approach, rather than insisting that plaintiff's expert satisfy all *Daubert* factors. The court also relied on the fifth *Daubert* factor (acceptance) to exclude the videotaped experiment in the Atlantic Ocean, but admitted the videotape of both craft operating in a "normal" bay chop. (That portion of the tape was also relevant to the issue of whether the engine stop switch caused the casualty.) Finally, the court excluded the expert's testimony regarding the alleged defective rudder and keel design, because the expert never tested any of the designs he had proposed as more suitable alternatives. The court concluded that "untested guess at a safer design is the type of hypothetical science that *Daubert* sought to exclude."[23] The court used similar reasoning to exclude the expert's testimony regarding the lack of a signaling device.

The *Buckman* case presents another lesson about the care that must be taken in performing videotape experiments or re-enactments of maritime casualties and proffering unsubstantiated conclusory opinions. Like algebra equations, one misstep in calculation causes a wrong answer.

D. Fifth Circuit[24]

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[22] 839 F. Supp. at 555.

[23] Id. at 557. The court used similar reasoning to exclude the expert's testimony regarding the lack of a signaling device.

[24] Other Fifth Circuit cases include: Henry v. Gulf Dumar Marine, Inc., 2000 AMC 2922 (E.D. La. 2000) [plaintiff's marine safety expert, a retired U.S. Coast Guard officer who specialized in marine safety and marine casualty investigation, not permitted to testify regarding affects of paint fumes on a crew member due to lack of expertise in the are of toxicology and proper respiratory protection; not permitted to testify regarding safety aspects of the vessel's stairway due to absence of scientific, or other specialized analysis for conclusions regarding stairwell, with conclusions begin within knowledge of the average juror]; Nugent v. Hercules Offshore corp., 98-3060 R(5), 1000 U.S. Dist. Lexis 5082 (E.D. La. Apr. 14, 2000)[plaintiff's expert mechanical engineer not permitted to testify regarding the cause of a lanyard failure due to lack of evidence regarding methodology and connection between expertise and conclusions rendered, while defendant's expert allowed to testify due to his satisfaction of the reliability and relevance tests]; Stewart v. Rowan Companies, Inc., 01-0987 R(5), 2002 U.S. Dist. Lexis 4135 (E.D.La. Mar. 7, 2002)[defendant's challenge plaintiff's economic loss expert in a maritime personal

Courts in the Fifth Circuit have used *Daubert* in maritime cases to exclude liability experts. An example is *Jacobs v. Northern King Shipping Co.*[25] Plaintiff proffered an experienced blue-water and brown-water vessel captain to opine on safety procedures employed aboard a vessel and on proper crew training and behavior for restraining a violent crew member. The defendants moved to strike the expert per *Daubert*. The court granted that motion, concluding that the captain's opinions regarding safety procedures were not supported by "trustworthy methodology" and that the subject was outside his area of expertise in that "he has no special training or expertise in self-defense but instead relied on his general experience as a marine master."[26] The captain "impermissibly relie(d) on other witnesses' deposition testimony, the printed safety regulations of the vessel, and on his own general knowledge and experience in reaching his expert opinions."[27] Moreover, in the view of the court, the proffered testimony did not satisfy Rule 702, because safety precautions required when an individual becomes violent or dangerous aboard a vessel "are within the common understanding of the average lay person."[28]

In *Saudi v. S/T Marine Atlantic*,[29] a case arising from the failure of an offshore crane, the court granted defendant's motions to exclude the opinions of both the plaintiff's expert and the plaintiff himself regarding maintenance and inspection due to the speculative nature of their opinions, the lack of methodology, and the absence of relevant qualifications.

The *Jacobs* and *Saudi* cases highlight a recurrent theme in maritime litigation: unsuccessful
attempts to introduce expert testimony regarding matters within the knowledge and experience of the average lay juror. Such matters as the slipperiness of oil on a deck, the reasonableness of personnel transfers between vessels in ten-foot seas, the dangers of standing under a suspended load or the absence of non-skid substances on vessel ladders and stairways simply do not require expert testimony. Lay jurors can readily understand these issues. Although for this reason the exclusion of an expert's testimony is not often

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injury case due to expert's lack of a doctorate in economics was rejected; expert possessed a master's degree in economics, had published journal articles on calculating economic damages and had been qualified as an economic expert in state court].

25 1998 WL 28234 (E.D.La. Jan. 23,1998).

26 Id. at *1.

27 Id.

28 Id. at *2.

29 159 F. Supp.2d 512 (S.D. Tex. 2001).

fatal to the party's case (as long as the underlying testimony is admissible), much time and money is wasted.

E. Sixth Circuit

In *Cook v. American Steamship Co.*,[30] plaintiff brought Jones Act and unseaworthiness claims to recover for injuries sustained in a fall after a line from which he was suspended over the side of a ship parted. The lower court awarded damages that were reduced by fifty percent by the plaintiff's own fault. The plaintiff appealed and contended that the comparative fault finding, contending that defendants' fault expert was not qualified under *Daubert* to testify that the plaintiff caused the accident by burning the rope in an effort to de-ice the ship's boom.

The Sixth Circuit excluded the defense expert on the basis that he failed to offer an expert's opinion at all. The court pointed out that the expert, although qualified as such in the testing of products in order to determine their stress capacity, only visually examined the rope and observed char marks, without conducting any tests. Therefore, in the view of the court of appeals, his opinion as to causation (i.e., that the failure of the line was caused by exposure to flame used by the plaintiff to de-ice the boom):

> was not scientific, technical or other specialized knowledge based upon testing conducted, as *Daubert* requires, in accordance with valid scientific methodology in order to permit the expert to draw inferences that are beyond the ken of lay jurors. . . .The expert's opinion was not expert testimony under Rule 702. It is precisely this kind of testimony that the Supreme Court in *Daubert* admonished federal courts to screen for scientific liturgy as part of the courts' gatekeeping function.[31]

F. Seventh Circuit

In *Cella v. United States*,[32] the plaintiff claimed that he suffered from polymyositis which was either caused or aggravated by trauma suffered while working on a Navy vessel. The defendant appealed from the district court's finding of Jones Act negligence, and argued that the plaintiff's medical expert did not comply with Rule 702.

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30 53 F.3d 733, 1995 AMC 2815 (6th Cir. 1995).

31 Id. at 739, 1995 AMC at 2822.

32 998 F.2d 418 (7th Cir. 1993).

The Seventh Circuit took the view that *Daubert* required de novo review of an expert opinion that is based on scientific fact or derived from scientific technique. The defendant's appeal was denied because the plaintiff's expert testimony about medical causation had adequate foundation where the expert listed possible causes of polymyositis which were identified and studied through medical research and published in medical literature.

G. Ninth Circuit

In *Thomas v. Newton Int'l. Enterprises*,[33] a longshoreman brought suit under section 905(b) of the Longshoreman and Harbor Workers Compensation Act[34] for injuries sustained when she fell through an unguarded hatch opening. She presented a longshore worker with twenty-nine years of experience as an expert on working conditions encountered by experienced longshore personnel. Granting summary judgment for the vessel owner, the district court excluded evidence of the expert witness, on the basis that he was not adequately qualified as an expert. On appeal, the Ninth Circuit reversed. In the view of the reviewing court, the lower court had abused its discretion in excluding the opinion of plaintiff's expert. The court of appeals found that the expert's years of experience were sufficient evidence of the specialized knowledge or skills required in non-scientific testimony. According to the Ninth Circuit, plaintiff's expert clearly exhibited "at least a minimal foundation of knowledge, skill and experience required under Rule 702 in order to give expert testimony as to the working conditions of experienced longshore personnel.[35]

In *Hampton v. Broadway Maritime Shipping Co.*,[36] an injured worker filed a section 905(b) action for injuries sustained when he slipped off of a ship's ladder. Claiming that the rungs on the ladder were worn, the plaintiff alleged a breach of the vessel's duty of care, and offered the testimony of an experienced marine engineer that the ladder rungs had lost their non-skid properties.

After holding that the plaintiff had failed to establish the opinion of his expert as a matter of scientific expertise under *Daubert*, the court granted summary for the vessel owner. The expert had not performed any tests to measure the skid resistance of the ladder rungs. This failure in his methodology caused an otherwise highly qualified

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33 42 F.3d 1266, 1995 AMC 388 (9th Cir. 1994).

34 33 U.S.C. §905(b).

35 42 F.3d at 1270, 1995 AMC at 392.

36 1997 AMC 1351 (N.D. Cal. 1997).

expert's opinion to be rejected for want of sufficient reliability. As this case illustrates, the importance of sound method in moving from facts to opinion cannot be overstated.

IV
SOME PRACTICAL CONSIDERATIONS

For years, trial courts allowed Coast Guard-licensed crewboat captains with sufficient experience operating vessels of the same type in like conditions to testify that certain sea conditions are (or are not) too rough for the safe navigation of a vessel of that type. That practice is in accord with Rule 102 of the Federal Rules of Evidence, which mandates just and inexpensive trials, and the trial court should continue this practice. *Daubert* should require no more than that this captain's opinion be objectively verifiable (by showing, for example, a consensus that eight- to ten-foot seas are the maximum safe operating conditions in a particular geographic location). *Daubert* should permit, but not require, expensive model building, testing and computer verification before a seasoned captain can testify in this way. In short, trial courts should use common sense when assessing non-scientific expert testimony.

If testing will be undertaken, then great care must be taken to insure that the test protocol is designed to accurately re-create the casualty and prove the necessary conclusions. It is not enough, for example, just to show how a kill switch works; rather, it is necessary to show how the working of a kill switch on the vessel in question would have prevented that particular plaintiff from coming into contact with the particular outboard propeller involved. Simple prudence dictates using someone who is qualified by education, training, etc. to author and accomplish the test. A test's proponent should expect a challenge derived from *Daubert* to each step of the procedure, and anticipate how the trial judge is likely to view that challenge.

The bar has been raised in all federal circuits, as well as in those states that have adopted *Daubert*. Early on, the prudent trial lawyer should get satisfactory answers from a prospective expert witness to the following questions:

X How or why is the proposed expert qualified to testify on the matter in dispute?

X Does the expert have current, hands-on experience in the field in question, and is the expert's income basically derived from work in the field, as opposed to litigation-generated experience and earnings?

X Has the expert ever been denied expert witness status, i.e. found to be unqualified; if so, how often, for what reason and by what judge?

X Has the expert ever been denied permission to testify after a *Daubert* hearing; if so, why and by what judge?

X Can the expert's opinion in the matter at issue be validated by (a) testing, (b) consensus standard, Niosh studies and/or OSHA and Coast Guard regulations, etc., (c) published materials such as the accident prevention manual for industrial operation that enjoys a reputation for accuracy in the involved area of expertise, and (d) model building, computer analysis, comparative testing, etc.?

X Have studies or papers been published on the matter in question, if so, are there any opposing views?

X Has the witness ever in testimony taken the same (or, more importantly) a contrary position?

X Is there any way to obtain credible peer group scrutiny and approval?

X How much will all of this cost?

Those engaged in a particular field of expertise that does not fit well with the *Daubert* factors, should not be held to strict compliance with the guidelines, which were intended to be flexible. By the same token, a witness may not express an opinion based solely on his or her subjective views; there must be a sound basis for the opinion, whether based on "science" or experience.

Once the decision is made to retain a testifying expert, it is important to define as precisely as possible the issue requiring expert testimony, and to determine exactly what information the expert will need in order to devise and employ an acceptable methodology. This often requires pointed discovery. In maritime cases, it is likely to require the collection of documents unique to shipping such as vessel drawings, course recorders, logs, electronic and paper communications between vessel and shore and watch standing assignments. The expert who relies solely on industry rules or government regulations will surely be stricken by the gatekeeper. After all, anyone can read a rule and decide whether it has been violated. The expert must have all information necessary to making accurate conclusions or justifiable assumptions on the facts, and to conducting reliable and verifiable tests or re-creations, if necessary. A single mistake in the analytical process can be fatal to the expert's ability later to testify.

As a general rule, defendants in maritime personal injury have the advantage of using industry personnel, inaccessible to the plaintiff, to testify based upon training, experience and industry practice. However, there are a number of sources of maritime experts available to everyone, notwithstanding the small size and fraternal mindset of the U.S. maritime industry. These sources include:

X Navigation Safety Advisory Counsel[37];

X Merchant Marine Personnel Advisory Counsel[38];

X Towboat Safety Advisory Counsel[39]

X national and state maritime academies[40]

Perhaps the best source of potential experts is the internet.[41]

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[37] Section 5 of the Inland Navigational Rules Act of 1980, Pub. L. 96-591; 33 U.S.C. 2073, established the Rules of the Road Advisory Council to provide advice to the Secretary on matters relating to the International and Inland Navigation Rules. The scope of RORAC was expanded and the Council renamed the Navigation Safety Advisory Council is "a deliberative body advis[ing] the Secretary of Transportation. . . on matters relating to the prevention of collisions, rammings and groundings, including. . . Rules of the Road, navigation regulations and equipment, routing measures, marine information, driving safety, and aids to navigation systems." Navigation Safety Advisory Council, NavSAC Charter, available as a pdf file at <http://ourworld.compuserve.com/homepages/acattalini/navsac.htm.(visited 12/23/02).

[38] Comprised of merchant mariners, pilots, ship managers, and members of the public, the Merchant Marine Personnel Advisory Committee:

> advise[s], consult[s] with, and make[s] recommendations . . .to the Secretary [of Transportation]. . . on maters concerning personnel in the U.S. merchant marine, including . . . training, qualifications, certification, documentation, and fitness standards. MERPAC [is] responsible for specific assignments and may conduct studies, inquiries, workshops and seminars in consultation with individuals and groups in the private sector and/or state and local government jurisdictions.

Merchant Marine Personnel Advisory Committee Charter, at <http://www.uscg.mil/hq/gm/advisory/merpac/charter.htm>(visited 12/23/02).

[39] The Towing Safety Advisory Committee advises the Secretary of Transportation regarding "shallow-draft inland and coastal waterway navigation and towing safety." Towing Safety Advisory Committee Charter, at <http://www.uscg.mil/hq/gm/advisory/tsac/charter.htm>(visited 12/23/02).

[40] United States Merchant Marine Academy, California Maritime Academy, and Texas A&M University at Galveston's Texas Maritime Academy. Experts may be recruited from their faculty and alumni.

[41] There are numerous web sites for locating all types of experts, including

Even best efforts may not be enough. In *Kuhmo Tire*, plaintiff offered an expert's opinion that the crash was caused by the failure of a tire, which produced a blow-out. The expert had been an engineer for Michelin for many years, and his job had been to study tire blow-outs in order to determine their causes. Yet, he was rejected by the trial court and eventually bu the Supreme Court. This case serves as a warning that the *Daubert* factors can be used to exclude certain marine industry personnel despite their experience. This is why great care must be taken in deciding whether to use a testifying expert at all. Frequently, a consulting expert is the best choice, enabling a practitioner to learn enough about the particular science, technology or custom at issue while avoiding the problems associated with presenting an expert to testify.

> The best defense is preparation. The prudent lawyer is fully prepared for an expert's deposition. She or he will scrutinize an expert's curriculum vitae well beforehand. In federal cases, additional intelligence may be collected from responses to interrogatories or an expert's report. The following has been found to be useful as a pre-deposition checklist:

X Consult your own expert about the opposing expert's opinions and theories;

X Review publications listed in the expert's curriculum vitae and read industry articles that appear relevant to the subject matter of the case; and

X Try to determine whether the expert has previously testified in similar matters and, if possible, obtain transcripts of the testimony.

It is also sometimes useful to issue a subpoena duces tecum with the deposition notice.

In the deposition of an expert, the following areas should always be covered:

X The nature of the scientific or technical issues the expert has addressed—get a simplistic listing of the expert's opinions up front. These "headliners" set the stage by forcing the expert to take scientific or technical positions; they enable full interrogation of the expert as to those areas of his education, training experience, etc. that relate specifically to these opinions. They are also helpful in determining whether those opinions are relevant under *Daubert*.

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marine experts. An example is ExpertLaw, <http://www.expertlaw.com> (visited 12/23/02), which lists marine and maritime experts by category (construction, navigation, salvage, etc.) and provides cross-references to types of incidents.

X Expert qualifications—the main focus of inquiry is the expert's previous experience with the specific circumstances of the case at hand. Use facts specific to the case at hand when conducting this interrogation. After all, an expert's testimony may be excluded because he has no training or experience with the facts surrounding the particular casualty in the case at hand. Remember to focus on the expert's previous experience with respect to each opinion he is giving, to ask the expert whether any prior writings relate to his opinions, and whether he has previously testified in factually similar cases.

X Possible bias—this is very important in the context of maritime liability experts. Many are constrained to testify only for the defense, lest they lose business. Bias may also relate to money, social relationships and to a strongly held point of view (i.e., that there are too many Jones Act lawsuits). The more you wonder why the witness is testifying as he is, the harder you need to probe.

X Information provided to or obtained by the expert—get a complete and total picture of what the expert has looked at. This means the documents provided by counsel, or information provided by counsel, books, articles and on-line resources examined, witnesses consulted, tests performed, observations made, consultations with others in the field, etc. If the defense expert uses information that differs from yours, it should be carefully examined for possible errors or unreliable methodology. (If you have all of the information discussed above, you are in a position to ask the necessary questions about how the expert travels from information to opinion.) Remember that *Daubert* is hospitable to theories verifiable by accurate testing that are generally accepted in the scientific community. If your industry-employed defense expert testified that unloading cargo in ten-foot seas is safe enough because everyone does it, with no methodology, empirical study, or testing to back the opinion, he and his opinion probably will not survive a *Daubert* hearing.

CONCLUSION

Maritime plaintiffs' lawyers are navigating new waters in the use and defense of experts. The first question in any case —whether even to present a testifying expert—deserves careful consideration, because such a witness can cause more harm than good. If an expert is indispensable, take the steps necessary to insure that your expert and his or her opinions will pass court scrutiny. On the other hand, if the indispensable expert is your opponent's, prepare to show that his opinion is inadmissible because it does not assist the trier of fact, it lacks a sound scientific basis, or because the expert himself does not meet the requirements of Rule 702.

Perhaps the most important step in preparation is learning the *Daubert* track record of your trial judge. He or she has wide discretion to allow or bar that sort of testimony. One judge's concerns are not necessarily those of another. Get a feel for his

or her attitude toward the role of gatekeeper and the value of opinions by experts by reviewing his or her previous *Daubert* opinions.[42] In terms of case preparation, profiling the judge may be the most important step of all.

[42] The Federal Judicial Center's Reference Manual on Scientific Evidence, (Fern M. Smith, ed. 2000), is likely to be your judge's guide to performing the gatekeeper role. It is available in pdf format at <http://www.fjc.gov/newweb/jnetweb.ns/autoframe?openform&url_r=pages/556&url_1=index>(visited 12/23/02).