

Australian legal guidelines for forensic engineering experts *

PJ Murphy †, L Duthie and B Bielert
Baker & McKenzie Solicitors, Melbourne, Victoria

D Charrett
Barrister-at-Law, Melbourne, Victoria

SUMMARY: *This article will guide the forensic engineering expert through all aspects of an engineering dispute in Australia. This includes investigations into the failure or non-operation of materials, products, structures or components; assisting the client and their legal teams in identifying the root cause of the failure or non-operation; and issues to consider when giving evidence to a tribunal as to the cause and potential repair or replacement options. The first part of this article provides guidance to an expert engaged as an independent expert or a “clean expert”, and the second part provides guidance to an expert engaged as an expert consultant or a “dirty expert” in relation to their role in the critical incident response through to the hearing of the dispute.*

1 INTRODUCTION

As discussed in this paper, forensic engineering experts generally investigate the failure or non-operation of materials, products, structures or components; they assist the client and legal team in identifying not only the root cause of the failure or non-operation; and they also assist by giving evidence to a tribunal as to the cause and potential repair or replacement options.

This article is prepared to assist forensic engineering experts navigate the legal aspects of an engineering dispute in Australia, commencing with the critical incident response through to the expert’s role in connection with a hearing, whether in the context of an arbitration or litigation.

One of the most critical aspects of any dispute is the need to align the technical and legal strategies from the outset, and for the lawyers and experts to support each other in their respective roles. The expert will be required to assist and educate the lawyers on the technical issues, and the lawyers will be required to guide the expert through the labyrinth of legal issues that arise during long and complex disputes.

When responding to a critical incident it is most important to clarify the scope of your role as an expert. There are three capacities in which you can act

as an expert. You may be engaged as an independent expert (often referred to as a “clean expert”), an expert consultant (often referred to as a “dirty expert”) or as an independent party who determines disputes between parties acting as an expert, but not as an arbitrator. The terms “clean expert” and “dirty expert” relate to whether or not the expert is seen as a member of the legal “team”. Which type of expert you are engaged as will shape how you are instructed, what documents you are provided with, what investigations you may conduct and what type of report you are instructed to prepare. Clarifying your role with the instructing lawyers at the outset is therefore critically important.

The first part of this article provides guidance to experts engaged as “clean experts” and the second part provides guidance to experts engaged as “dirty experts” in relation to their role in the critical incident response through to the hearing of the dispute. The role of an independent expert to adjudicate on a dispute in an expert determination is a substantial topic on its own, and does not form part of this paper (Kendall et al, 2008).

2 THE ROLE OF THE INDEPENDENT EXPERT

2.1 The scope of your role

An independent expert will be engaged principally to:

- view the damaged or failed structure or equipment
- review background material and documentation

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† Corresponding author Philippa Murphy can be contacted at philippa.murphy@bakermckenzie.com.

- conduct tests and investigations
- produce an expert report(s) that will be provided to the tribunal (judge(s) or arbitrator(s)) and exchanged with the other parties to the dispute
- ultimately give evidence at a hearing.

It is important, when determining the scope of your role, to understand the forum of the dispute in which you have been engaged.

An independent expert engaged for litigation is subject to highly prescriptive Court Rules. These rules differ in each state and territory, and they focus primarily on the content and form of the expert report. Further details of the content of these Court Rules is discussed below.

An independent expert engaged for arbitration is not necessarily subject to such explicit rules, although the parties may agree to adopt a particular court or institution's rules on expert evidence. It would, however, be prudent for an expert in an arbitration to act in accordance with the Court Rules, even if those rules do not bind a party-appointed expert in the arbitration.

Whether you are engaged in litigation or arbitration, impartiality of the expert is required and should be demonstrated at all times.

2.2 Putting yourself forward

Engaging an independent expert is one of the most important decisions a client and its lawyers make in an adversarial matter. Selection of an expert with the right technical skills and experience, and one who presents his/her evidence articulately and persuasively, can often make the difference between winning and losing a case. For this reason, it is a task that should be approached with the greatest degree of care and consideration by all parties, including the expert.

For the potential expert, when first approached to act in this capacity, two matters in particular should be dealt with as a priority – conflicts and expertise.

As to conflicts, has any prior work been undertaken by the expert for any of the parties that might compromise the expert's ability to act independently, or are there any other associations that might undermine the perception of independence of an expert (eg. personal friendships, etc.)? Any such conflicts must be disclosed immediately by the expert so that they can then be carefully considered by the lawyers.

As to expertise, the expert should ensure that he/she is properly briefed on the technical issues in the dispute. This will enable the expert to determine whether his/her expertise actually qualifies them sufficiently to provide an expert opinion in the matter. If the information given to allow this assessment is insufficient, then more information should be requested. The ultimate admissibility of

the expert's report will require it to be demonstrated that, among other things:

- there is a relevant field of "specialised knowledge" and that this knowledge is outside the realm of normal experience
- the expert has expertise in an aspect of that "specialised knowledge" that has been gained through training, study or experience.

A customised curriculum vitae, tailored to the specific issues in dispute and referring to academic qualifications and relevant expertise (eg. investigative reports, referenced articles, consultancies, etc.) should be prepared and sent to the lawyers so they can assist you in determining whether you have the qualifying expertise. If engaged, an expert should assume that this curriculum vitae will be scrutinised in detail by the other party's lawyers, and that the expert may be cross-examined on it.

However, an expert should be circumspect in promoting their expertise as an expert, in order to avoid the perception that he/she is a "hired gun", available to give favourable testimony on behalf of anyone who hires them. Judges and arbitrators soon get to know which experts make their living as expert witnesses, and their testimony as experts is often discounted because of their frequent appearances, which may give the impression that they will adopt a scientific position to support their client's interests. In these days of the internet it is not difficult to investigate which other cases an expert has given evidence in, the nature of the opinions expressed and their professed expertise to support those opinions. Thus, in a practical sense, a "professional" expert is likely to attract more energetic cross-examination about his or her independence and history as an expert, which may not assist their client's case. It may be very damaging to an expert's credibility if they have a long history of giving evidence on a wide range of issues, particularly where these do not appear to be related to their core expertise and experience. From the client's perspective, the ideal expert is one whose main occupation is in the practical application of their experience and expertise to non-contentious/non-litigious problems, and for whom the giving of expert evidence is not their main business.

2.3 Your obligations and duties generally

Independent experts are engaged to view the damaged or failed structure or equipment, review background material and documentation and to conduct tests and investigations. In exercising these roles the independent expert has significant professional and ethical obligations and duties, in particular, to the tribunal (judge(s) or arbitrator(s)).

The relevant Court Rules, apart from prescribing the form of expert of evidence (which will be discussed in detail below), also stipulate general duties owed by experts to the court. The governing rules may

use different wording depending on the individual court, but the essential elements of these duties are as follows:

- An expert witness has an overriding duty to assist the court and not to the person retaining the expert on matters relevant to the expert’s area of expertise.
- An expert witness is not an advocate for a party when giving evidence.
- An expert witness must undertake all the investigations she/he deems necessary to reach an informed opinion.

The duties owed to the tribunal by the expert take precedence over those owed to the party appointing the expert. This can create tensions that manifest themselves in a number of ways as set out below.

An independent expert must not be exposed to legally privileged, without prejudice or confidential, information at any stage of their engagement. Where privileged or confidential material is provided to an independent expert, and that expert later prepares a report that is exchanged with another party or produced to the court, a party will risk losing privilege and/or confidentiality over that material. If you think you have been provided with such a document, immediately bring it to the attention of the lawyers and seek clarification about whether or not you may rely on its content.

An independent expert must have the scope of his/her work set out at the outset in a formal brief or engagement, to be sent preferably by the lawyers. This brief should set out the background of the matter, the facts and assumptions on which the expert is being asked to rely, the scope of the work of the expert, the questions being asked of the expert, and a list of all of the documents that have been provided to the expert. Ultimately, this brief will be annexed to the expert report, and it is an important means by which an expert can keep track of the documents and instructions being provided to him/her. Supplementary letters of instruction should then be provided each time additional or revised instructions are provided to the expert, and if they are not, then you should request them. It should be assumed that all communications with the expert will be disclosed to the other side, and will be later scrutinised on the issue of the independence of the expert. Such communication should therefore be limited, and formal in nature, eg. by way of supplementary instructions to the expert and not by way of lengthy email communications or informal meetings.

An independent expert, when conducting tests and investigations, should keep detailed records of the work being undertaken by him/her. This may be in the form of photographs, video or handwritten notes. These may be useful later if there are any arguments about the way in which those tests or investigations were conducted.

Avoid involving the lawyers, clients or any third parties in the work being conducted until such time as you have formed a preliminary view about the issues raised in your scope of work. As we have mentioned, impartiality is absolutely critical, and an expert needs to demonstrate that the opinions arrived at were not subject to any external influences.

Finally, if insufficient information or documentation has been provided to you, or you wish to conduct further tests or inspections, set these issues out clearly in correspondence with the lawyers. As discussed below, identifying these issues or concerns early will ensure that your report, when you are asked to prepare it, is as comprehensive as possible and takes into account all relevant information/documentation. Further, many rules for expert evidence now require the expert to explicitly acknowledge that their investigations have been comprehensive, eg. “a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate, and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the court” (Supreme Court of Victoria, 2010).

2.4 Your obligations and duties in relation to the production of an expert report

Australia does not have national and uniform expert rules, however, the Court Rules are highly prescriptive in terms of both what an expert’s report must contain, as well as the duties of an expert in the conduct of the matter. Any person who intends to give evidence in court in an expert capacity must be familiar with these rules together with the more general obligations and duties of an independent expert as set out above.

2.4.1 Expert reports for the purposes of litigation

Irrespective of the nature of evidence to be given during a hearing, and indeed even if a hearing does not take place, an expert will invariably be required to provide a written report.

Such a report is required to fulfil one or more of the following objectives:

- To inform the client of the expert’s opinion on the causes of an incident or event.
- To inform the client’s lawyers of issues that will be central to the finding of causal and legal liability for the event and its consequences.
- To provide a basis for negotiations with representatives of the opposing party.
- To provide an expert opinion that can be used as evidence in the legal proceedings and any hearing.
- To critically analyse the reports of an opposing party’s expert with a view to identifying any

matters upon which the expert disagrees and to explain the reasons for that disagreement.

To fulfil these disparate aims, more than one report may be required as the case evolves.

One of the most often overlooked but critical elements of an expert report is that it must set out clearly, either in the body of the report and/or by way of annexing a detailed curriculum vitae, the expert's qualifications. If an expert is not found to have sufficient qualifications and expertise to express an opinion on a particular topic then his/her evidence will not be admitted. Alternatively, if the expert's qualifications and expertise are not as relevant or as strong as those of the opposing expert, then the tribunal may adjust the weight that it gives to that expert's evidence.

Given the lawyer's role in managing the dispute resolution process, the lawyer should define the brief for an expert at each stage of the engagement. As we have set out above, a properly prepared brief will define and document in sufficient detail with:

- the factual and documentary material that the expert is to base his/her report on
- the specific questions that the expert is to answer (with detailed reasons).

An expert should not proceed with preparation of a report without a clearly written brief. Furthermore, the expert should ensure that the report addresses only those issues raised and that it does not go beyond answering the questions posed in the brief.

It may be that the answers to the questions posed in the brief are not sufficient to determine the issues on which expert evidence is required, or they may lead to further questions that need to be answered. This may require modification of the brief and further opinion evidence from the expert, however, it is preferable that the expert evidence evolves in this way rather than the expert providing extraneous material in a draft report, or answers to questions that were not asked.

It is essential that the expert's report reflects the opinion of the expert. The expert must not place him or herself in a position where it can be subsequently alleged that the opinion is in fact not wholly that of the expert. Expert reports have been rejected in whole or in part by courts based on a perception that the expert's opinion has been unduly influenced by the legal team, with a consequent loss of independence on the part of the expert. As set out above, all contact with the expert should be made through the lawyers in a formal way. In no circumstances should the independent expert liaise directly with the client or hold informal discussions with them without the lawyers being present. It must be kept in mind that all communications with the independent expert could be required to be disclosed during the hearing and so caution must be exercised at all times in this regard.

Counsel of perfection would therefore be for the expert to prepare and issue their report in isolation, without discussing the contents with, or providing any drafts to, the lawyers. However, this approach fails to acknowledge the real and practical benefits which the expert (and the tribunal) can obtain by a careful, limited and proper interface with the lawyers in the course of preparation of the expert's report.

The first area of potential benefit is in feedback on the form of the expert's report. Especially in the case of an overseas expert not experienced in common law litigation, or a local expert providing an expert's report for the first time, receiving appropriate comment on the report can be invaluable. Questions frequently arise such as:

- to what extent, if at all, should the expert provide drafts of his/her report to the legal team
- how should the expert deal with any comments on the draft report
- are there any circumstances in which an expert should change the report based on comments from the legal team.

If done properly, feedback on the report can avoid significant cost and expense by the expert presenting a report to the court that is not readily understood and will either require preparation of a supplementary report to better explain the expert's opinion, or considerable time in the witness box by the expert to explain his or her opinions and the basis for them.

An independent expert cannot and should not receive any comments from the legal team as to any matter involving the substance of the expert's opinions. However, there are several areas where the legal team may be able to assist the experts with the form of the report. For example, the legal team can:

- advise on the legal admissibility of the contents of the report, eg. opinions expressed on matters outside the expert's expertise (such as legal conclusions)
- assist with the clarity, completeness and structure of the expert's reasoning. The legal team can suggest how further data is necessary, data could be better presented, where reference is required to professional literature and where the analysis needs to be rephrased (for example to assist a judge or arbitrator who has no scientific or engineering expertise).
- assist by identifying any weaknesses in the logic and analysis of the report that an opposing expert may try to capitalise on.

The overarching requirement is, however, that the report must be (and be seen to be) drafted by the expert and not by the legal team, and that the legal team should not interfere in any way in the views or opinions expressed by the expert.

Experts should be aware that some parties in litigation or arbitration routinely subpoena the

opposing expert’s own files and documents, and then seek to cross-examine the expert on any material changes in wording, analysis or conclusions during the various phases of preparation of their report. There is no requirement, ethical or otherwise, which compels an expert to retain copies of his/her working documents and drafts prepared in the process of writing the final report submitted to the tribunal. Ultimately, it is a matter for each individual expert as to how they manage their own records – most experienced experts have their own internal practice of retaining on file (whether paper or electronic) only the documents of significance to their final analysis, and make no effort to preserve any others.

The expert should be clear in his/her own mind, and in the report, of the difference between factual evidence and opinion evidence. An expert’s factual evidence is that based on the application of his/her own physical senses, ie. what the expert personally saw, heard, smelt, felt, etc. The expert’s factual evidence should be clearly identified in the report, and in a different section to and preceding any opinion evidence.

The expert should also clearly identify any factual evidence provided by others on which she/he relies. The identification should not only state what “facts” are relied on, but also the source of those “facts”, eg. specific documents or lay witness statements. Any such evidence must be proved by others, and if it is not, the assumed “facts” will not be taken to be “facts” by the tribunal (judge(s) or arbitrator(s)). Witnesses for another party may give contradictory evidence, and their version of events may be regarded by the tribunal as more likely, and hence accepted as “facts”.

Thus, although an expert’s opinion may be “correctly” arrived at using well-established “science”, if the factual basis on which it is based is not accepted as “facts” by the tribunal, the expert’s opinion may have no validity. For this reason, it is essential that all the facts on which the expert’s opinion is based are clearly articulated, and their importance as a basis for the opinion highlighted. The lawyers preparing the client’s case can then ensure that the necessary factual evidence is given by others.

In summary, an expert’s report should therefore contain:

- details of the expert’s training, study and experience, sufficient to qualify him/her as an expert to give an opinion on the questions posed in the brief
- the brief which commissioned the expert to prepare the report
- the Court Rules or guidelines with which the report complies, and explicit acknowledgement that those rules have been complied with
- any factual evidence of the expert’s own observations, etc.

- any other assumed “facts” on which the expert’s opinion is based, and the source of these assumed “facts”
- the scientific or technical basis on which the expert’s opinion is based
- the expert’s opinion on the questions/issues raised in her/his brief.

2.4.2 *Expert’s report in reply*

It is usual practice for an expert to be given an “opposing” expert’s report, and to be asked to prepare a report in reply. As with the expert’s original report, the lawyer’s brief should clearly define what the expert is required to cover in the report in reply.

The issues may include some:

- common ground between expert opinions
- differences between factual bases for opinions
- differences between experts’ opinions
- whether the “opposing” expert is appropriately qualified and experienced to express the opinions he/she has expressed.

For technical and legal reasons, it may be unnecessary for an expert to address certain aspects (or even the whole of) an “opposing” expert report, and the expert should go no further in the reply than requested to do so.

2.4.3 *Expert reports for the purposes of arbitration*

Arbitration rules generally do not have any stipulations concerning how an expert is to give evidence to an arbitral tribunal.

The parties to an arbitration could choose to adopt the International Bar Association’s Rules on the Taking of Evidence in International Arbitration; rules that include mechanisms for the presentation of expert evidence. These evidentiary rules, however, deal more with the form of any expert report than higher concepts of duties owed by the expert witness.

What arbitrators will do, however, when assessing the weight of evidence given by a party-appointed expert is to take into account the perceived degree of independence of that expert. This means that party appointed experts do need to persuade the arbitral tribunal that their evidence is independent. What should experts do to meet the required standard? The Court Rules governing expert evidence represent a useful benchmark for independence, being themselves based on case law dealing with the conduct of experts. Party-appointed experts in arbitrations would be well advised to generally follow the Court Rules in order to establish their independence to the satisfaction of the arbitral tribunal.

Of particular importance are the obligations owed to the arbitral tribunal by the expert – to be objective, unbiased and not partisan – which stands side-by-

side with the duties of the expert to the party that has appointed him or her.

2.5 Your obligations and duties in relation to a hearing

This section of the article sets out the guidelines for experts in the context of a more formal dispute, usually being litigation or arbitration. In this context, the expert will encounter more involvement and participation by the barristers engaged by the client. During a hearing it is the barrister's responsibility to present the case to the tribunal, with the support and assistance of the lawyers and experts.

2.5.1 Experts' conferences

An experts' conference is a pre-hearing meeting of experts, usually without lawyers, at which the experts attempt to find common ground in their respective opinions, in order to narrow their differences, and thereby reduce the extent of issues that require evidence at the hearing. An experts' conference may be chaired by an independent facilitator, or the experts may be left to their own devices.

Before the conference it is highly desirable for the parties' lawyers to establish a set of questions for the experts to answer. The difficulty and time required to achieve this should not be underestimated, since each lawyer will have independent views on what are the key issues in their client's case. However, without such an agenda, the experts' conference may not achieve anything of value, particularly if the experts' reports have addressed different questions.

If the experts' conference is to be chaired by an experienced independent facilitator who is familiar with the pleadings, the expert reports and the legal issues in the case, the facilitator may be the best person to formulate the questions to be answered in the expert conference.

Given that there may be disagreement as to key factual evidence, the questions must be carefully structured to ensure that all experts answer them from the same factual basis. It may be that questions need to be separately answered for more than one alternative factual basis. It is therefore imperative that those aspects of the factual evidence relevant to the experts' opinions are identified as agreed, or stated in the alternative as contended for by the parties.

Either the presence of an independent facilitator or a preparation of a list of questions to be answered by the experts is an essential precondition for an experts' conference to be valuable.

The discussions between the experts (and the facilitator if there is one) in the conference are "without prejudice", and cannot be subsequently used as evidence in the hearing. This is to ensure that the conference discussions can be robust, and there

is no disincentive to a free and frank exchange of views and exploration of alternatives by the experts.

The "deliverable" of an experts' conference is a joint report, with the experts' answers to the questions posed to them. Where they agree on an answer to a specific question, the report may require little elucidation. However, where the experts disagree, the joint report should document each expert's reasons for holding the opinion to which they adhere. The joint report subsequently becomes evidence in the hearing.

2.5.2 Preparations prior to a hearing

The most persuasive expert evidence given orally in a hearing will be expressed confidently, articulately and clearly, in terms the judge/arbitrator will understand. This requires that the expert be completely familiar with his/her own expert report(s), and the factual assumptions and the scientific/technical basis on which their opinions are based. It should be noted that there is often a long delay between the preparation of the written report and giving oral evidence, so the expert must set aside time prior to the hearing to refresh his/her recollection of their report. As oral evidence in a hearing may be largely confined to cross-examination, it is equally important for an expert to be completely familiar with all "opposing" expert reports, and the extent of and reasons for any disagreement with the opinions of any other expert(s).

It is apparent that the best preparation for an expert prior to a hearing is to reread their own report(s), as well as those of the "opposing" experts. Oral evidence in a hearing is normally expected to be just that; if an expert wishes to refresh her/his memory by referring to their notes or report(s), permission should be sought from the judge/arbitrator. The less this is required, the more compelling the oral evidence – another reason why complete familiarity with the material is so important.

Experts should not lose sight of the fact that tribunal hearings are formal processes, in which the opposing parties may have large amounts of money and their reputation at stake. It is therefore important for an expert to ensure that his/her appearance and demeanour are appropriate to portray them as mature, experienced professionals who understand the gravity of the proceedings. Thus, formal business attire and an upright attentive posture in the witness box will give an initial favourable opinion of the expert's professionalism, and will increase the likelihood that their opinion will be accepted by the judge/arbitrator.

The nature of tribunal hearings is such that it may not be possible to specify exactly the day and time the expert is required to give his/her evidence. The expert will therefore need to advise their instructing lawyer(s) beforehand whether there are

any conflicting engagements that could prevent the expert from giving evidence when called. Once an expert has been given the potential dates and time windows for their evidence, it is essential to ensure that these are kept free of conflicting appointments. It seriously detracts from an expert’s professional image if she/he does not appear at the designated time, or expects to be able to leave the hearing for another appointment before his/her evidence has been completed.

It would be improper for a lawyer or barrister to “coach” an expert in the evidence that she/he will give, where “coaching” refers to suggestions as to what an expert should say in response to certain questions. However, it is not improper for a lawyer to help an expert by advising the types of questions that may be asked in examination in chief and cross-examination. For example, the Victorian Bar Rules provide that a barrister may test in conference the version of evidence to be given by an expert, including drawing the expert’s attention to inconsistencies or other difficulties with his/her evidence, but must not coach or encourage the expert to give evidence different from which the expert believes to be true.

It is usually helpful for an expert to be instructed on the general court environment and etiquette, and on the difference between examination in chief and cross-examination, and given advice on how to answer questions in a way that will assist in making their evidence more compelling, for example:

- listen carefully to the question
- ask for the question to be rephrased if it is not understood
- answer only the question asked
- do not volunteer information
- do not argue with or question the barrister.

Careful preparation along the above lines will give an expert more confidence in giving his/her evidence. This will significantly enhance the likelihood that the judge/arbitrator will be persuaded by the expert’s evidence.

2.5.3 *Hearing protocols*

The “traditional” protocol for giving evidence in a tribunal hearing is that the plaintiff presents its evidence first, usually all the lay evidence followed by all the expert evidence. This is followed by the defendant presenting all of its evidence, usually lay evidence followed by the expert evidence. These “traditional” protocols are now frequently changed, particularly in regard to expert evidence that may be presented concurrently for the plaintiff and defendant. This is discussed further below. Other changes in order may be made in specific situations, eg. to accommodate the time that an expert is available to give evidence.

There is, however, one traditional “protocol” that is adhered to, irrespective of the order and manner in which expert evidence is given. This is the requirement that, while an expert is being cross-examined, she/he must not communicate with their instructing lawyer or barrister for the expert’s client until cross-examination has been completed (except in accordance with the terms of an agreement with the opposing party’s legal advisors). Thus, if an expert’s cross-examination is adjourned for lunch or overnight, the expert must not communicate with their client’s lawyer, barrister or any other expert engaged by the client. Sometimes the judge/arbitrator will give an appropriate warning before an adjournment. However, even in the absence of such a warning, it is important that this protocol is strictly observed to ensure that there can be no suggestion of “coaching” or “interference”.

Another area in which experts should seek instructions from their instructing lawyer is whether it is appropriate or required for them to sit in the hearing to hear other witnesses give evidence before they are called. The modern approach in some tribunals is for all experts to give their evidence in the presence of each other, in what is colloquially referred to as a “hot tub” (see below). Even in the absence of a hot tub, in some jurisdictions it is expected that experts will hear the evidence of the other experts. In other situations, however, it may be necessary to seek leave from the tribunal for an expert to hear the evidence of other experts before they have given their own evidence. There are no hard and fast rules, so an expert should discuss this with their instructing lawyer before the hearing.

2.5.4 *The nature of evidence in a hearing*

The evidence-in-chief of an expert is their “story”, ie. what they saw, heard, smelt, felt, etc., and the opinions they formed and the basis for those opinions.

Traditionally, evidence-in-chief was taken by the client’s barrister asking questions of the expert in the hearing (oral examination). These questions must be “open” and not leading, ie. the barrister cannot state a proposition which she/he asks the witness to agree to or not. Non-leading questions require the witness to tell his/her own story in their own words, eg. “when you went to the site on [date] what did you do?”

It is now also common for evidence-in-chief to be expressed in the expert report(s); this evidence may be adduced by the examining barrister asking whether:

- the report was written by the expert
- the expert wishes to make any corrections
- the expert honestly holds the opinions expressed.

Subject to any corrections advised by the expert, the report(s) may then be signed by the expert and tendered as evidence-in-chief by the client’s barrister. Different protocols for the adoption of expert’s

reports as evidence-in-chief may apply in different jurisdictions or tribunals, or even between different lists in a specific court. An expert should consult with their instructing lawyer to ascertain the protocol that will apply to them.

If there are further matters not included in the expert's report that the client's barrister wishes to bring out in evidence, there may be some oral examination in chief.

By contrast, cross-examination by the "opposing" barrister would usually be entirely in the form of leading questions. Good cross-examination consists of a series of questions, each stating a simple proposition that only requires a yes or no answer (and which may be in a form to invite a yes answer). Individually, the answers to the questions may seem innocuous, and it may not be obvious to the expert where they are leading, but collectively they "ring fence" a major issue, for which the last question "closes the gate" to elicit the concession the cross-examiner is seeking.

Notwithstanding the desire of the cross-examining barrister to confine an expert witness to yes/no answers, an expert should not hesitate to put forward any qualification or explanation which she/he feels is necessary to properly explain the answer to the question asked.

Provided the expert is not perceived as merely being argumentative, a judge/arbitrator would normally allow an expert significant latitude in responding to cross-examination. Unless the client's barrister objects to a question, and the judge/arbitrator upholds the objection, an expert will normally be expected to answer all questions put to him/her in cross-examination.

Re-examination occurs when the court takes further evidence-in-chief by the client's barrister, after cross-examination has been completed. Re-examination is normally only permitted to bring out further evidence-in-chief in relation to issues raised in cross-examination. The same rules apply to re-examination as to evidence-in-chief, ie. no leading questions.

2.5.5 *Expert evidence in a "hot tub"*

A more recent innovation in expert evidence is concurrent evidence, sometimes referred to as "hot tubbing". This process changes the traditional order of evidence (plaintiff's evidence followed by defendant's evidence), and requires the experts giving evidence on the same issues to do so in a concurrent session. This process is only feasible if all the experts have submitted expert reports and typically expert reports in reply.

In such a "hot tub", each expert may make a statement or give a brief presentation. The judge/arbitrator may then ask questions of the experts. The experts themselves may have the opportunity of asking the

other experts questions, before the barristers carry out their cross-examination of "opposing" experts.

The intention of such concurrent evidence is to enable the experts' opinions on given issues to be readily compared and contrasted; this is not so easy to do if there has been a significant lapse of time between the evidence of opposing experts.

The concept of experts asking each other questions seems fine in theory, but may not be so effective in practice if experts attempt to cross-examine other experts. It would be preferable if an expert's questions of other experts were confined to "open" questions, seeking an explanation for differences of opinion or of the scientific/technical basis on which opinions are based. Cross-examination is a skill which few experts are likely to have. Furthermore, attempts to cross-examine by an expert may give the impression that the expert is acting as an advocate for his/her client's case.

2.5.6 *Expert evidence in fast track arbitration*

Fast track arbitration is a process of arbitration in which strict time limits are placed on each phase of the process, in an endeavour to achieve a speedy and economical resolution of the dispute. In particular, the hearing time is generally limited, and typically each party has an equal amount of time to present its case. An essential feature of fast track arbitration is that the hearing time is insufficient to allow for comprehensive oral evidence on all issues that may be relevant to the dispute. Expert evidence in fast track arbitration is likely to include a number of the procedures discussed above, such as:

- preparation of detailed expert reports and expert reports in reply
- one or more experts' conferences
- joint report(s) of experts
- adoption of expert reports as evidence-in-chief
- little or no oral examination in chief
- concurrent evidence in the hearing.

The key issue that experts in a fast track arbitration should be aware of is the short and (perhaps) inflexible timeframe for the whole arbitration process. This includes tight deadlines for submission of expert reports – these must be met if the expert's evidence is to be accepted.

A contracted timeframe might also have the consequence that the client's barrister does not turn his/her mind to the expert's evidence at the time the expert's report is served. When the barrister does turn his/her mind to the expert's evidence, it may be shortly before the hearing; this may place significant obligations on the expert for conferences with the barrister at short notice.

Such demands are not confined to fast track arbitration – an expert should be aware that

preparing an expert report and giving evidence in any hearing may require the expert to comply with shorter timeframes than she/he considers desirable, and in a way that may adversely impact other commitments of the expert.

3 THE ROLE OF THE EXPERT CONSULTANT

3.1 The scope of your role

An expert consultant will be engaged principally to:

- view the damaged or failed structure or equipment
- review background material and documentation
- conduct tests and investigations
- assist the legal team with the selection of the “clean” expert, and to review the initial opinion of that expert to help the legal team to determine its validity and robustness
- to liaise with, provide assistance to and educate the legal team at all stages of the dispute.

An expert consultant will not be engaged to produce a written report for exchange and submission to a tribunal, nor will they be required to give evidence at the hearing of the dispute. As a result, neither the Court Rules, nor any rules imposed on experts in an arbitration, will strictly apply to an expert consultant. In essence, an expert consultant will not be seen or heard by the opposing party or the tribunal, and his/her opinions will be used for internal investigative purposes only.

The role of an expert consultant is therefore much less formal and much more flexible than that of the independent expert, however, impartiality in this role remains critically important to serving the client’s best interests.

3.2 Putting yourself forward

As with the engagement of the independent expert, it is critically important that the expert consultant consider and deal with the issue of conflicts and expertise at the outset of a matter.

We have set out in detail above what must be considered by an expert in this context, and in summary, the expert must:

- consider if he/she has done any work for either party that might compromise the expert’s ability to act independently. Where such a conflict arises it must be disclosed immediately by the expert.
- ensure that he/she is properly briefed on the technical issues in the dispute and that their expertise actually qualifies them sufficiently to provide expert assistance in the matter. In the case of an expert consultant, the standard or level of qualifications required may not be as high as it is for an independent expert, and this issue should

be discussed between the expert and the lawyers at the earliest possible opportunity.

3.3 Your obligations and duties generally

Unlike an independent expert, the expert consultant does not have any duties or obligations to the tribunal. The expert consultant is engaged for the sole purpose of assisting the client and the legal team in relation to the technical aspects of the dispute. The inherent tensions referred to above do not therefore manifest themselves in the engagement of an expert consultant.

In particular, the difficulties identified in relation to the receipt of privileged or confidential material by an independent expert do not apply to an expert consultant. An expert consultant can freely receive any information or documentation, and can use that material to inform himself/herself in relation to all matters. Both an independent expert and an expert consultant are, however, bound by certain undertakings of confidentiality not to disclose that information to any other person at any time or to use it for any purpose other than the current dispute (commonly known as the Harman Undertaking).

An expert consultant should also have the scope of his/her work set out at the outset in a formal brief or engagement to be sent preferably by the lawyers. This brief should set out the background of the matter, the facts and assumptions on which the expert is being asked to rely, the scope of the work of the expert, the questions being asked of the expert, and a list of all of the documents that have been provided to the expert. While the expert consultant will not be required to formally submit this letter to any party, it will assist in keeping track of the documents and instructions being provided to him/her. It is rare that supplementary letters of instructions will be sent to expert consultants due to the work being much more flexible and fluid. Expert consultants would be wise, however, when requested to assist with a particular task, to confirm those instructions back to the lawyers in writing so there can be no confusion about what it is the expert is being asked to do.

Informal meetings between the lawyers, clients and the expert consultant may be required frequently, and the expert consultant should not be concerned about participating in such meetings. Provided a lawyer is present at these meetings, anything discussed, or any documentation exchanged, will generally be legally privileged and cannot be disclosed to any other party. In order to maintain this privilege it is recommended that every document produced by the expert be marked “subject to legal professional privilege” for the avoidance of any doubt.

As with the independent expert, it is recommended that an expert consultant keep detailed records of any tests or investigations being undertaken by him/her

as these may be useful later if there are any arguments about the way in which those test or investigations were conducted. These records will not be required to be disclosed to any party, however.

While an expert consultant is permitted to participate in informal meetings with the lawyers and clients, it is not recommended that he/she participate in conferences with the independent experts engaged in a particular matter. As discussed above, the independent expert must remain impartial at all times, and side discussions or communications, no matter how innocent, between the independent expert and the expert consultant have the potential to jeopardise the impartiality of both experts. It is therefore recommended that all discussions take place through the lawyers, or with lawyers present, so that formal channels of communication can be set up and adhered to.

Expert consultants should also be aware that as part of a legal/technical team they will deal not only with lawyers but also with the executives of the client. In these instances, one of the major challenges is to explain complex technical issues to people who may not have a technical background, and who therefore require assistance and clarification in relation to issues they do not readily grasp. In other words, having the ability to explain highly technical matters in lay terms is a critical skill when performing the role of an expert consultant.

It should be noted that in South Australia, the Supreme Court Civil Rules 2006 have specific formal requirements that must be complied with for an expert to be considered to be an expert consultant ("Shadow Expert") and not an independent expert. These requirements include notifying the other party of the Shadow Expert's appointment within a specified timeframe.

3.4 Your obligations and duties in relation to the production of an expert report

An expert consultant may or may not be required to prepare a formal written report. In the event that you are asked to prepare a report on a particular issue, you are not required to follow the strict Court Rules. However, the Court Rules do reflect industry best practice, and we recommend that any reports you are required to produce follow those Court Rules regardless. In particular the following matters should be addressed:

- Details of the expert's training, study and experience, sufficient to qualify him/her as an expert to give an opinion on the questions posed in the brief.
- The brief which commissioned the expert to prepare the report.
- Any factual evidence of the expert's own observations, etc.

- Any other assumed "facts" on which the expert's opinion is based, and the source of these assumed "facts".
- The scientific or technical basis on which the expert's opinion is based.
- The expert's opinion on the questions/issues raised in her/his brief.

3.5 Your obligations and duties in relation to the hearing

An expert consultant will not be required to give evidence before a tribunal, however, he/she will have significant and important duties in relation to the hearing of a dispute as follows:

- To attend when technical evidence is being heard or when technical issues are being addressed. Your role will be to observe and assist the legal team, if necessary, with any queries or concerns that arise of a technical nature.
- To assist the legal team with the preparation for cross-examination of certain lay and expert witnesses. The expert consultant generally meets with the barristers who will conduct the cross-examination and he/she will assist with potential lines of questioning that may be of benefit.
- At the conclusion of the hearing, to assist the barrister with the preparation of submissions or a written statement of the client's position on the technical issues and evidence.

6 CONCLUSIONS

This paper has provided guidance for forensic engineering experts in Australia who may be engaged either as (i) an independent ("clean") expert to provide expert opinion evidence to a court or arbitration tribunal, or (ii) an expert consultant ("dirty" expert) who is engaged to provide expert opinions and technical assistance to the legal team conducting litigation or arbitration on behalf of their client. Both types of experts need to have and demonstrate appropriate qualifications and experience in relation to the subject matter of the dispute to qualify them as an "expert". Further, both types of experts need to be, and be seen to be, impartial in order to properly serve the needs of their client.

The fundamental distinction between an independent expert and an expert consultant lies in their ultimate "deliverables": the independent expert must give evidence in court or an arbitration hearing, whereas the expert consultant's role is limited to interfacing with the client's legal team. The work of an independent expert must generally be carried out in strict conformity with the applicable court or institution rules, which are designed to ensure the integrity and impartiality of the expert, and to emphasise that the expert's duty to the court/arbitral

tribunal takes precedence over the expert's duty to his/her client and their legal team. The guidelines outlined above are intended to assist experts to understand and fulfil their duty to the court/arbitral tribunal in a way which enhances the likelihood that their opinion evidence will be accepted and not rejected or given minimal weight.

An expert consultant will work closely with the legal team, however, as she/he is not required to give evidence, she/he is not formally subject to court or institution rules. Nevertheless, the principles of these rules provide useful guidance for such an expert to follow, without the restrictions on access to privileged information that constrain independent experts.

It is suggested that, if experts follow the guidelines in this paper, they will have a clear understanding of the important role they play in litigation or

arbitration, and their activities and the expert reports they prepare will make a positive contribution to the effective and efficient resolution of disputes.

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PHILIPPA MURPHY

Philippa Murphy (LLB; LLM) has a leading practice in the response to and resolution of structural and equipment failures. She has extensive experience in advising clients from the avoidance or occurrence of a critical incident through to arbitration, litigation or expert determination. Philippa has presented several seminars to clients and published articles on various risk management topics in *Australian Mining Magazine*, *Engineers Australia Magazine* and *Australian-German Chamber of Commerce Business News*. Philippa completed her Masters of Law at the University of Melbourne where she focused on management, dispute resolution, international arbitration, contractual remedies, trade practices and product liability. She is a member of Baker & McKenzie's Global Energy, Chemicals, Mining & Infrastructure Group.



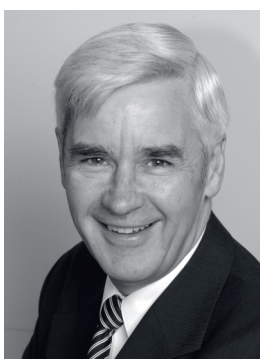
LEIGH DUTHIE

Leigh Duthie (LLB (Hons); BEc; LLM) has over 20 years experience in acting for major Australian and multinational corporations, and government agencies in relation to complex contractual and non-contractual claims arising from infrastructure projects, defects in plant and faults in heavy mining machinery. This experience includes work in all major Australian courts, including the High Court of Australia, as well as expert determinations, references to special referees, and domestic and international arbitrations. Leigh has also conducted numerous alternative dispute resolution procedures including mediations.



BORIS BIELERT

Boris Bielert completed his German Law Degree at the University of Freiburg, Germany, in June 2006 and joined Baker & McKenzie's Melbourne office shortly thereafter. Boris' knowledge in both Common Law and Civil Law jurisdictions combined with his language skills has been an asset in large-scale litigation in the Supreme Courts of Victoria and Queensland, and in international arbitration for both international and Australian clients. During his time with Baker & McKenzie, Boris has briefed many experts from diverse technical disciplines in relation to different areas of law. Boris is a member of Baker & McKenzie's Global Energy, Chemicals, Mining & Infrastructure Group and the German-Australian Chamber of Commerce. He has co-authored various articles on topics, including risk management and engineers' duties in *Australian Mining Magazine* and *Engineers Australia Magazine*, among others.



DONALD CHARRETT

Dr Donald Charrett (BE(Hons); LLB (Hons); MConstLaw; PhD; FIEAust; MIAMA) practises as a barrister in building and engineering disputes, and is accredited as an arbitrator and mediator by the Institute of Arbitrators and Mediators Australia. His career in construction law has included litigation, mediation, expert determination, facilitation of an experts' conference and arbitration of construction disputes. Prior to becoming a lawyer, Donald worked as an engineer for over 30 years, including 12 years as a director of a multidisciplinary consulting engineer. He has published widely in Australian and international journals, and presented papers at engineering and legal conferences, seminars and the Melbourne University Master of Construction Law course. He is a joint author with Philip Loots of the recently published book *Practical Guide to Engineering and Construction Contracts*.