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Trial Strategy and Techniques in Highway Contract Litigation

A report submitted under ongoing NCHRP Project 20-6, "Right-of-Way and Legal Problems Arising Out of Highway Programs," for which the Transportation Research Board is the agency conducting the research. The report was prepared by Kingsley T. Hoegstedt and Orrin F. Finch. Larry W. Thomas, TRB Counsel for Legal Research, is principal investigator, serving under the Special Technical Activities Division of the Board.

THE PROBLEM AND ITS SOLUTION

State highway departments and transportation agencies have a continuing need to keep abreast of operating practices and legal elements of special problems involving contract litigation, as well as highway law in general.

This report includes ideas and suggestions for strategy and trial techniques - together with legal authorities in support thereof-for use by legal counsel in contract litigation.

This paper is included in a three-volume text entitled, "Selected Studies in Highway Law." Volumes 1 and 2 were published by the Transportation Research Board in 1976 and Volume 3 in 1978. Together they include 45 papers and more than 2,000 pages. Copies have been distributed to NCHRP sponsors, other offices of state and federal governments, and selected university and state law libraries. The officials receiving copies in each state are: the Attorney General, the Highway Department Chief Counsel, and the Right-of-Way Director. Beyond this initial distribution, the text is available through the TRB publications office at a cost of $90.00 per set.

CONTENTS

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Trial Strategy and Techniques in Highway Contract Litigation

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INTRODUCTION

A major objective in developing trial techniques for any lawsuit is the clear and effective presentation of fact and law to a court or jury. This is a challenge in even the ordinary construction contract trial, for rarely are construction problems confined to readily understood facts or law. Most litigation, particularly tort actions, involve activities generally familiar to judges and juries. In contrast, few persons are familiar with the activities, skills, or standards of performance involved in design or construction of structures and highway facilities, or even the relationships that exist between the designer, engineer, architect, contractor, subcontractor, inspector, owner, surety, and supplier. In tort actions, the significance of violating a posted speed sign, for example, needs no explanation. In contract litigation, however, the significance of ultimate facts is rarely obvious. For example, is the construction of a particular highway overpass, which is one foot lower than the legal clearance, the fault of the designer, the inspecting engineer, the contractor, the surveyor, or someone else? Plans, specifications, contract documents, change orders, acts of the parties, custom, and usage can all be involved and will need proper interpretation. Why should the contractor bear any or all the risks associated with unanticipated weather or unexpected geological impediments? How can a judge or jury be convinced that a 40-day overrun in completion is the responsibility and fault of the other party?

In the typical tort action, the witnesses' testimony will be directed primarily towards describing the events that occurred within a relatively brief time before the accident. Of course, in tort actions, much evidence can be developed that relates to the effect of the injuries or establishes the conditions present at the time of the accident; however, in most instances, the facts of the case are relatively simple and can be readily understood by the average person.

This is in sharp contrast to the typical public highway construction contract case. The contractual relationship that gives rise to the litigation involves a continuing relationship between the public agency

and the contractor covering a period of months, and in many instances, years. During this time, many events will transpire that will be relevant to the dispute. In addition, considerable written information will have been generated by both sides relating to the claims presented by the contractor. Furthermore, in most instances a public construction contract trial involves several claims, and usually the factual situation which gives rise to each of these claims is not an event that occurs on a particular hour of a certain day, but rather, is a series of events that occur over a period of time. A contract action can be viewed as having the complexities of an antitrust case and the uncertainties of a divorce action.

One of the problems associated with a complex case is the large number of records and documents involved. In a recent case prepared by the authors, records relating to the 65 claims on which the contractor brought suit were contained in 40 sizeable cartons. The contractor also had voluminous records. The task of incorporating such massive records into manageable yet comprehensive proportions is not slight. This task is followed by the even more challenging burden of presenting the case or its defense in a manner understandable to the trier of fact, whether it be a judge or a jury.

Further complications arise from the esoteric nature of technical terminology, and from the tendency of engineering and technical personnel to assume that the outcome of the litigation will be judged solely on the issues and that trial strategy, techniques, and witness demeanor are incidental and unimportant. Of course, this is an unrealistic assumption, particularly in a construction contract trial. The complexity of construction work demands that greater emphasis be placed on trial preparation and trial techniques. The first and perhaps most challenging trial technique is to simplify. This is not to suggest that properly prepared construction cases will result in short trials.

Confusion may be considered a form of trial strategy in some instances, but this is rarely so in public construction contract litigation. Experience has demonstrated that public engineers and contracting officers are responsive to meritorious claims. They do not view their roles in administering contracts as requiring either a benevolent or an antagonistic posture. Construction contracts can be expected to be administered fairly and equitably, based on sound reason and documentation. Thus, it is in the best interest of the contractor to properly document and substantiate his claim to the engineer or contracting officer. A technique of fostering complexity and confusion would not be beneficial for the contractor at the claim-review stage or at the litigation stage, where the contractor has the burden of proof and the obligation to initially present the evidence. Confusion should also be seriously questioned as a proper defense technique, as judges and juries

expect a higher standard of legal performance and justification for claim denial by a governmental agency.

Therefore, the objective of this paper is to suggest techniques that will simplify the facts and issues in contract litigation and provide some help to the attorney who is confronted by a construction contract case. This paper is not intended to include basic information common to all types of cases. These matters will be discussed only with regard to the distinct nature of construction contract cases. Although this paper assumes that the reader has never prepared a construction contract case, it is hoped, nevertheless, that some information contained herein will benefit those who have had some contract experience.[1]

PREPARATION OF THE CASE

Although it is desirable in all litigation to begin investigation and preparation as early as possible, it is particularly critical to do so in a highway construction contract case. Many months will have passed since the commencement of contract performance, and the need for preservation of records demands prompt action. In addition, it will take time for the attorney to become familiar with the facts of the case and to gain the needed perspective to determine what records will be important. Later, he will be able to direct investigators to obtain information in particular areas of the case, but an initial understanding of the facts is essential to intelligently direct the activities of others.

Every contract case deserves the most painstaking preparation. Unlike other types of actions, there is no accident or claims investigation report to rely on. Explanations by the engineers are essential for a complete understanding.

Certain issues in every highway construction contract case are followed avidly by the community of contractors and by public agencies alike. The resolution of the case by decision, or even by compromise, can have a serious impact on contractors or public agencies. It can result in a flood of similar claims being filed against the public agency when it loses a case, and when the public agency prevails, the effect can be to minimize the chances of contractors to prevail on similar claims. Scant attention will be paid to whether the case was poorly handled or improperly decided. Thus, each contract case deserves the best effort, which should begin with the responsible attorney acquiring all the pertinent information involved in the case.

[1] The authors have attempted to present material on construction contract litigation for use by both plaintiffs and defendants. However, the authors' experience, in representing public agencies, has been primarily devoted to the defense posture. As a consequence, a significant portion of the material is oriented toward defense of contract actions.

Learning the Facts

The authors have developed a series of preliminary steps that will provide an introduction to a new contract case. As is the usual situation, an attorney's legal services are requested well after the events which led to the claim have occurred and after the project has been virtually completed. It is assumed that the case at issue involves substantial money claims or significant legal issues affecting many contracts, and thus warrants the necessary expenses involved in following each of the following suggestions.

Become Acquainted with the Job and the Personnel

First, visit the project site. The project site is ordinarily the central character in any contract claim. It has its own peculiar language, geography, and personality. It is essential that these peculiarities be fully appreciated, because this knowledge is a prerequisite to understanding the facts of the particular claims. The visit to the project site should be accomplished as soon as litigation is imminent. In any event, this visit should be completed before a complaint or answer is prepared. On a visit to the project site, the attorney should be accompanied by the most knowledgeable resident engineer or project engineer. The attorney should view the entire project, with special emphasis directed to those areas involved in the contractor's claims. If borrow or disposal sites located outside the project limits are involved, these should also be visited. The attorney should become acquainted with areas that have been given special names, and should also become generally familiar with the engineering stationing of the highway. This will enable counsel to properly reference the engineering writings and documents relating to the project.

The second step, which can be accomplished during the initial visit, is to arrange a meeting with the construction crew to discuss the project, particularly the portions of the project that gave rise to the claims. It may also be beneficial to record this first meeting[2] because much of what is said will be more intelligently understood after more information is developed about the project. At this initial involvement in the case, neither the attorney nor the engineering staff will fully understand the legal or factual significance of all the elements of the case. Often, the significance of a particular statement or contention of an individual will not be meaningful until the attorney has become more acquainted with the facts of the case. If the first meeting is recorded,

[2] Such recordings are for the attorney's benefit in preparing the case and should be exempt from discovery as part of an attorney's work product. Hickman v. Taylor, 329 U.S. 495, 91 L. Ed. 451, 67 S.Ct. 385 (1947). *See* Annot., 73 A.L.R.2d 12 (1960).

the attorney can later listen to the recording with greater understanding and can better evaluate earlier statements.

The meeting will also provide an opportunity for the attorney to answer questions and explain legal procedures and what will be expected of those involved. In addition, when the project and the claims are discussed, the combination of the experiences and recollections of each of the participants will often reinforce and refresh the knowledge of others in a manner that could never be accomplished through individual discussions. Sufficient time must be allowed for the meeting to permit those present to state their involvement in the project, with particular reference to the claims involved. The discussion should be uninhibited to allow those present to speak freely or refute what others have said. This will be a valuable opportunity to resolve differing recollections or interpretations of events.

It is also important, if an interpretation of the specifications is involved in the claim, that these specifications be discussed so that everyone present understands them and concurs in their interpretation.

Obtain Pertinent Documents

Almost without exception, some writing or document potentially pertinent to the contract case will be missing or destroyed by the time of trial. This is not to suggest that chicanery or wrongdoing is to be anticipated, although an opponent cannot be expected to be so generous in characterizing the loss, nor can an explanation fully dispel the inference of misconduct.

The possibility that a potentially important document may be destroyed results from several factors. Writings are likely to be mislaid because of the sheer magnitude of documents, diaries, desk memos, calendar notes, and letters that are accumulated. Further, as an attorney begins to focus on specific issues and facts, many collateral records suddenly become pertinent. In addition, the increasing demand for more limited record retention periods and the mistaken belief that such records can be destroyed on completion of the project can result in the premature destruction of documents. For example, documents used for the planning, design, or estimation stage of the project may become critical to support or refute a contention. Therefore, because these phases of the project were fully complete before the construction phase began, such records could have been destroyed before their importance in the litigation was realized. It is good practice, therefore, to circulate a memorandum to all offices and departments, advising them of the impending lawsuit and directing that pertinent project records, together with all other records (e.g., planning, design, right-of-way) that pertain to the project area be preserved.

In any litigation, it is difficult to know what records the opposing side has. Because the request for inspection must be made with precision,[3] it is well to preliminarily explore the type of records available. Although differences exist between the record-keeping techniques of the various States and of individual contractors, enough similarities exist to make a list of the type of records that may be encountered.

State Records.—On almost all public construction contracts, diaries are kept by all the public agencies' key construction engineering personnel. On most projects, diaries are kept by the resident engineer and each of his key inspectors; i.e., inspectors of grade, structures, pavement, and the like. Properly kept diaries record the quantities of work performed each day by the contractor, problems encountered in the work, and summaries of important conversations and decisions relating to the project.[4] Thus, these diaries are the best records of the day-to-day performance of the contractor, as well as a record of any orders, interpretations of specifications, and other actions by the public agency that affect the contractor's work on the project.

Other records usually kept by a public agency that can be of assistance in litigation are:

1. Planning and design information, together with any photographs made during the design phase of the project.
2. The project report which discusses anticipated difficulties that might be encountered in the project.
3. Preliminary estimates of the cost of the project. Although this document is prepared primarily for budgeting purposes, it often contains useful information regarding the ease or difficulty the public agency anticipates in project construction.
4. Plans and specifications, special provisions, and other contract documents.
5. The mass diagram, although not usually part of the contract,[5]

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[3] *See, e.g.*, Fed. R. Civ. P. Rule 34, 28 U.S.C.A.; Kenealy v. Texas Co., 29 F. Supp. 502 (D.C.N.Y. 1939).

[4] Specific types of information that can be expected to be found in the Daily Job Diaries include: time work started and ended; operations being conducted; general quality of work; general work progress; noteworthy job features, such as unusual conditions, new and improved methods, or poor methods; defective work corrected or to be corrected; significant instructions given and to whom given; summary of job problem discussions with contractor personnel; subcontractor activities; safety observations, such as hazardous conditions, operations, or procedures.

[5] *See, e.g.*, Calif. Dep't of Transp., *Standard Specifications* § 2-1.04 (1975), which provides, in part, as follows:

The swell or shrinkage of excavated material and the direction and quantities of haul or overhaul as shown on said mass diagram are for the purpose of design only, and in like manner as provided in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," concerning furnishing information resulting from subsurface investigations, the Department assumes no responsibility whatever in the interpretation or exactness of any of the information shown on said mass diagram, and does not, either expressly or impliedly,

contains useful informatioon on how the quantities of material (i.e., excavation and fill) will balance out on the project. It is also helpful in determining whether the anticipated requirements for borrow material, or for areas in which to waste excess materials, were valid.

6. Test information compiled by the public agency on the project during the design stage. This includes results of tests performed on materials taken from centerline borings used in the design stage of the projects, as well as other tests made during the design process—for example, tests made on potential sites for borrow material.

7. Test information compiled by the public agency during project construction. This includes all routine tests made on materials during the progress of the work.

8. Correspondence relating to the project.

Contractor's Records.—1. Bid documents. As discussed in the section on "Use of Bid Documents," *infra*, bid documents are among the most important documents to be obtained from the contractor. In obtaining bid documents, the attorney should be certain that he obtains all the back-up documents that were used in preparation of the bid. This includes worksheets, tests, photographs, and quotations from suppliers and subcontractors.

2. Agreements with subcontractors.

3. Lists of personnel assigned to the project, in addition to payroll records.

4. Diaries kept by any of the contractor's personnel relative to the project.

5. Tests made by the contractor during the bidding stage or during construction, and the results of any analyses made by consultants hired by the contractor during either the bidding stage or during construction.

6. Photographs or motion pictures taken during the bidding stage or during construction.

7. Internal and external correspondence by contractor personnel relating to the project.

It should be emphasized again that, when records of the contractor or State are made available, they should be copied rather than simply inspected. Because the records are voluminous, it is difficult to determine, in a quick inspection, the significance of each document examined, and with modifications that occur in the theory and defense of the case as it is developed, information contained in these documents can take on a greater meaning than was apparent at the time of first inspection.

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make any guaranty of the same. Frederickson & Watson Constr. Co. v. Dep't Pub. Wks., 28 Cal. App. 3d 514, 518; 104 Cal. Rptr. 421 (1972).

Obtain Technical Assistance

As soon as possible, the attorney should select an engineer to assist him in preparing the case. The engineer will act as a paralegal assistant; he will organize the numerous contract records, prepare engineering exhibits, and aid in discovery. One of his first tasks will be to catalog, copy, or index all pertinent project records. The importance of his role cannot be over-emphasized. Normally, for the defendant-owner, one of the resident engineers will perform these tasks. Contractors' counsel tend to rely more on home office personnel rather than on less permanent job personnel. In either case, an engineer familiar with the project and its records on a day-to-day basis should be preferred, and in a large complex case, these tasks can be expected to be a full-time job.

Selecting the ideal paralegal assistant will be difficult because few engineers possess the necessary training to lead an attorney to information concerning motivation, inconsistency, and impeachment for trial and depositions. The task is made more difficult because it is important to choose an assistant who will be able to articulate events associated with the project and who also understands the contentions that will be made by both sides.

Unfortunately, the attorney's first choice often may not receive approval from the client. The same factors that influence the attorney's choice of the engineer will probably also influence that individual's superiors in wishing to retain him in his present capacity. In addition, the client may underestimate the attorney's needs and thus assume that a records clerk will be sufficient.

The attorney should anticipate that the individual selected may be reluctant to be removed from the mainstream of his professional activity, for it may be unfortunately true that during the time he is absent from his normal engineering activities he is not viewed by his management or colleagues as a productive individual. This absence can impede his progress and advancement in the organization, despite the unique experience he gains that will help the client avoid future disputes. Thus, the first major selling job of an attorney will be to secure the best engineering assistance.

When the engineer has been selected, the attorney should emphasize to all involved personnel that this individual has authority to directly contact anyone within the organization. Some senior employees may resent the direct contact and the instructions to supply answers or meet with the attorneys to prepare for depositions. Tactfulness will help the situation, but an explanation by the attorney at the initial meeting and a memorandum explaining the designate's role will help avoid friction.

At the time of trial, the engineer will be working closely with the attorney. Arrangements should be made at that time for him to occupy a place with the attorney at the counsel table if at all possible. Even

if the court orders the exclusion of witnesses, an exception is usually available to allow corporate and public agencies one designated consultant since there is no individual client.

Investigation

After the first general discussion, the team that has been selected to prepare the case should then compile a list of items that require investigation. At this meeting, the contractor's complaint should also be discussed and analyzed so that a tentative draft of an answer, including appropriate affirmative defenses, can be prepared. Matters to be investigated should be reviewed as soon as possible so that relevant evidence may be obtained before it is destroyed or mislaid. The following is a typical list of items to be investigated:

1. Contact and obtain statements from persons who worked on the job—former employees of the contractor and the agency, material suppliers, laboratory personnel, and the like. Locate and set aside all records pertaining to the project—photographs, laboratory analyses, and the like. In many cases, subcontractors have also kept diaries, notes, and made photographs, which can be of great assistance. It is important to locate these records and to preserve them as early as possible.
2. Determine what permits or environmental impact statements the contractor or agency may have had to prepare or obtain for the project. Pertinent information can often be found in these documents. For example, where the contractor contends that he bid the project with the intent to use a State-designated borrow site, his statements made to a local planning agency regarding the superiority of another site on which he sought to obtain an excavation permit can be devastating to his case. Frequently, appearances before planning commissions, boards of supervisors, and city councils, are recorded, transcribed, or otherwise reported.
3. Check similar projects, operations, contracts, and claims with which the opposition party may have been involved. It is surprising how often engineers and contractors alike ignore similar claims on which they have assumed a contrary, or at least different, position. Such inconsistent positions can affect their present claim or defense. Often, on the same project, there are actions inconsistent with the parties' contentions. This inconsistency can be harmful to the parties because "[p]erhaps there is no more certain guide for the construction of uncertain contractual provisions than the conduct of the parties themselves in respect thereto."[6]

[6] Bares v. Quincy Sanitary Dist., 128 Cal. App. 2d 530, 536, 275 P.2d 827, 831 (1954). *See generally,* Warner Constr. Corp. v. City of Los Angeles, 2 Cal. 3d 285, 466 P.2d 996 (1970); 3 CORBIN, CONTRACTS 249 § 558 (1951).

Discovery

Discovery provides the essential tools for preparing a contract case for trial. Through discovery, the strengths and weaknesses of the opposition's contentions can be determined. More significantly, discovery can provide the opportunity to establish or disprove facts and contentions with an opponent's own records or witnesses. This type of evidence can be far more damaging to the opponent than evidence developed from independent sources.

No attempt is made here to detail the use of the various discovery devices available in most jurisdictions. Instead, a few techniques regarding the timing and interrelated uses of depositions, interrogatories, requests for admissions, and inspection of records for construction cases are briefly discussed.

The usual sequence of discovery is: (1) inspection of the opposition's records; (2) preparation of interrogatories relating to the identification and existence of documents and witnesses; (3) taking depositions; (4) preparation of substantive interrogatories; (5) submission of a request for admissions. It must be recognized, however, that this sequence may not be advisable in every instance.

A motion for production and inspection of documents may be difficult to prepare and substantiate in the beginning phase of discovery when contentions and issues are not firmly established. An initial interrogatory as to the identity of records would be helpful, but it usually will not disclose all records that are eventually desired. Where possible, it is a good practice to agree on a mutual exchange of records with the opposing side. It is important that both sides share a mutual understanding as to the scope of the agreement to avoid later assertions that one side failed to fully comply. Regardless of whether a document is produced through discovery or by agreement, no file or document should be made available for inspection without first reviewing every page. The attorney must know precisely what his opposition will inspect, and he must remove any privileged materials that may be inadvertently included.

After the opponent's construction records have been inspected, copied, and analyzed with the aid of the engineering assistant, a thorough and exhaustive set of interrogatories should be drafted. This initial draft need not be selective, and even questions that might be better suited for deposition should be included. In this way, a set of questions will be developed for use in all aspects of discovery. Later, the attorney can decide the preferred approach for securing the best answer: either a deposition, interrogatory, or a request for admission.

Usually, it is disadvantageous to serve substantive interrogatories in advance of depositions. Any adverse witness deposed thereafter can be expected to be carefully prepared to respond consistently with the interrogatory answers. On the other hand, answers to certain interrogatories may produce unexpected explanations or references that

should be examined further by depositions. To avoid this dilemma, the attorney should file the substantive interrogatories after some depositions have been completed but before all major witnesses have been deposed. In this manner, unexpected areas can still be covered in the remaining depositions.

This points up one matter of warning in depositions. An attorney should be reluctant to keep depositions of his own people open for any extensive period of time without completion. It may be more difficult and troublesome for the opposition to obtain multiple depositions than to resume a long-pending deposition.[7]

The value of requests for admissions is often overlooked. Many attorneys erroneously believe that because only the most rudimentary facts will be admitted, the entire effort is a complete waste of time. It is possible, however, to use interrogatories in conjunction with a request for admissions, thus requiring that either a matter be admitted or an explanation be proffered as to the inability or unwillingness to admit each request.

To summarize, the suggested guideline for discovery is to commence with an inspection of records, followed by a preparation of interrogatories regarding records, witnesses, and contentions. Depositions should follow, with the filing of substantive interrogatories before the completion of all depositions. Requests for admissions can follow depositions, with a final set of interrogatories as needed.

Particular situations will dictate different approaches, and variations may be necessary to adequately anticipate the opposition's discovery steps and techniques.

Use of Bid Documents

The importance of the contractor's bid documents in any construction contract litigation cannot be over-emphasized. They are valuable because they reflect in detail the thinking and plans of the contractor in advance of actual performance. In preparing the bid, the estimator must make assumptions as to what materials will be used, where such materials will be obtained, and what type of equipment will be used. Frequently, conditions prevailing at the time the work is actually performed will render the bid assumptions invalid. Thus, for example, where damages relating to a claim are allegedly based on the use of particular materials or equipment, it is essential to verify that use of these materials or equipment was contemplated at the time of bid.

Another reason for the defense to acquire the bid documents is to

[7] The use of multiple depositions can become a vehicle for harassment and thus courts generally have discretion to prevent such abuse. *See, e.g.*, CAL. CODE CIV. P. § 2019(b)(1) (West 1974). *But see*, Carlson v. Superior Court, 56 Cal. 2d 431, 15 Cal. Rptr. 132, 364 P.2d 308 (1961). *See also*, Annot., 86 A.L.R.2d 138 (1962).

determine whether or not the bid is unbalanced and, if so, the effect of that unbalance on the contractor's claim.

Contractors unbalance their bids for a variety of reasons, some of which are:

1. To prevent their competitors from being able to determine the actual costs at which they can bid the various items.
2. To increase the bid prices for items that will be paid early in the project so that they will get early money.
3. To attempt to profit from any mistakes the bidder believes that the public agency has made in estimating the quantities of the various items of work.[8]
4. Lump sum items are sometimes unbalanced because of the need to adjust the bid just before it is submitted and it is easier to adjust a lump sum item than a unit basis item.[9]

The pressures on the bidder to unbalance his bid are so great that it can be assumed that all bids are unbalanced, the only question being the degree of unbalancing.

Two pages of a contractor's bid estimate are shown in Figure 1 to illustrate the type of information that can be developed from bid documents. These pages are only a part of the actual work sheets used in preparing a bid, and they have been retranscribed from the original pages for the sake of clarity.[10]

The contractor contended that he had relied on information furnished by the State in selecting a material source known as the Wilder pit for production of certain gravel materials. A review of the bid documents established that the contractor had actually prepared his bid

[8] Where the bidder believes that the public agency has incorrectly estimated the quantity of certain items, the bidder will adjust his bid accordingly. If the bidder believes that the quantity has been underestimated, the bidder will increase the bid price of that item, thus requiring the public agency to pay an inflated price for the additional quantity of that item. Conversely, if the bidder believes that the item has been overestimated, the bidder will decrease the price bid for that item. Thus, any decrease in the units of work on that item will be at an artificially low bid price. *See* H. COHEN, PUBLIC CONSTRUCTION CONTRACTS AND THE LAW 53 (1961). *See also*, Matthews, *A Way to Analyze Competitors Bids to Improve Your Strategy*, ENG. NEWS-RECORD, 108 (June 18, 1964).

[9] It is a practice of subcontractors to withhold their bids to the prime contractors until just before bids have to be submitted to the public agency. This reduces the prime contractor's ability to bid shop between subcontractors and results in bids being put together immediately before the submission deadline. It is easier for the prime contractor to make any last-minute adjustments he may wish to make in the bid by adjusting a lump sum item, payment of which is fixed rather than a unit basis item, where payments may be subject to adjustment depending on the number of units performed. *See, e.g.*, Merco Constr. Engineers, Inc. v. Los Angeles Unified School Dist., 274 Cal. App. 2d 154, 79 Cal. Rptr. 23 (1969).

[10] Wunderlich v. State, 65 Cal. 2d 777, 56 Cal. Rptr. 473, 423 P.2d 545 (1967).

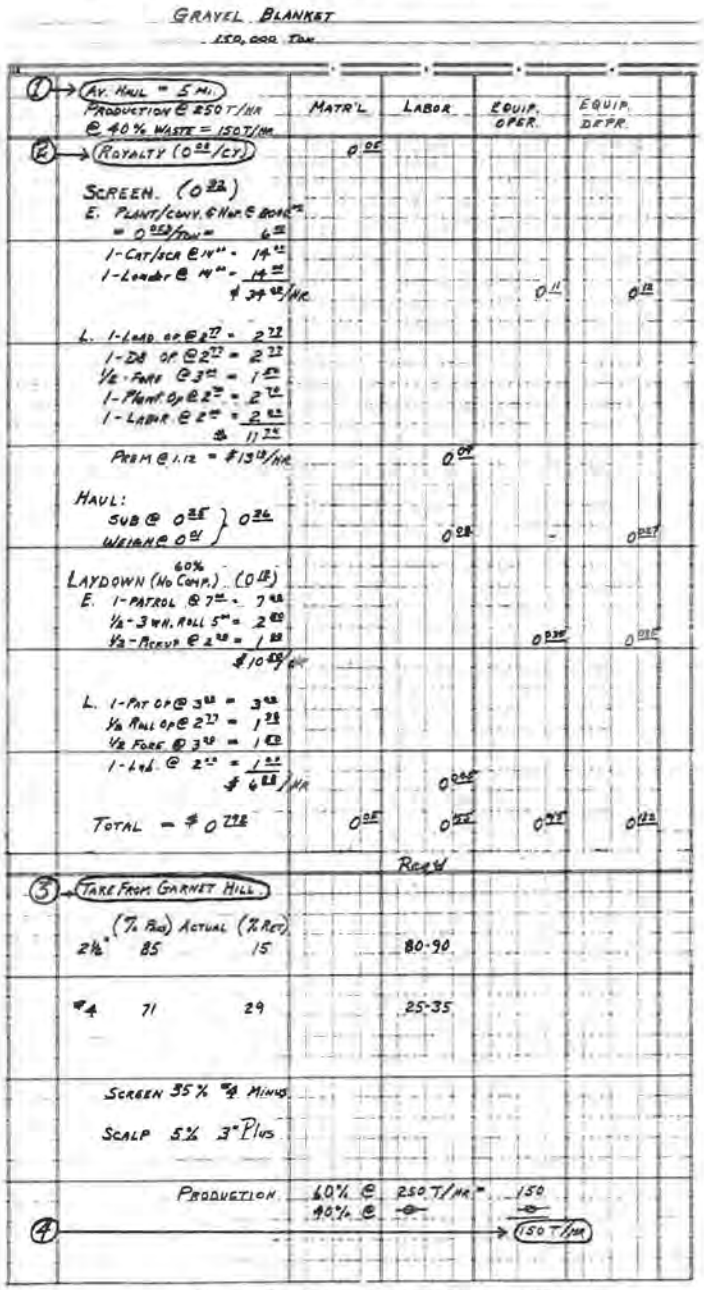


Figure 1. Example of contractor's bid sheets.

on the basis of obtaining this material from another source known as Garnet Hill. Certain information found on the bid worksheets, marked as Items 1 through 4 on Figure 1, proved helpful in defending the case on this important point and on the question of damages. Items 1 through 3 supported the State's contention that the bid was based on using the Garnet Hill pit rather than the Wilder pit.

Item 1 showed that the contractor anticipated that the average haul would be 5 miles. This distance corresponded to the average haul distance for the Garnet Hill pit. The average haul distance for the Wilder pit was 3.5 miles. Item 2 showed that the anticipated royalty for material was $0.08 per cubic yard. The royalty at the Wilder pit was $0.0075 per cubic yard, not $0.08. Item 3 shows the words "Take from Garnet Hill"; a clear indication by the person preparing the bid that his figures and assumptions were based on taking the material from that location, not from the Wilder pit as claimed.

The contractor, in his damage claim, stated that he anticipated producing his rock materials at 489 tons per hour. In his bid preparation, however, he anticipated a more realistic and much lower production rate. As Item 4 in Figure 1 shows, the rate anticipated for gravel blanket was 150 tons per hour.[11] Production figures for other rock materials, together with gravel blanket, average 189 tons per hour, for a total less than half of what the contractor used to compute his damages.

These are examples of information that can be developed from the bid sheets of the contractor and illustrate the importance of such documents. It should be emphasized that proper analysis of bid documents requires an expert experienced in bidding procedures.

It should also be emphasized that most bidders are reluctant to release their bid documents, and it is not rare that attempts are made to prevent disclosure by many and varied techniques, from simple foot-dragging to protective orders.

In obtaining the bid documents, it is essential that all the work sheets and other subsidiary documents that go into bid preparation also be obtained. In addition to the work sheets this includes any tests that may have been made by the bidder, photographs, records of conversations with material suppliers, subcontractors, and the like. The contractor's bid sheet, or "spread sheet" as it is sometimes called, is worthless without the working papers that were used in its preparation, and any attempt by the bidder to limit discovery to just the bid sheet should be emphatically rejected.

In the event of a claimed loss of any of the bid documents, it is advisable to contact other bidders on the same project. It is almost an invariable practice of bidders to retain, for extended periods of time,

[11] See Figure 1, *supra*.

all their bid documents whether or not they were the low bidder on the project. It is thus possible in most instances to obtain testimony from other bidders on the same project who can produce in court voluminous bid documents relating to their own unsuccessful bid. Such evidence will put any claimed loss of bid documents by plaintiff in proper perspective, and the inference can well be made that his bid documents would not have supported his contentions.

Use of Visual Aids

As trial preparation proceeds, the attorney should consider the use of visual aids to assist him both in the preparation of his case and the eventual presentation in court.[12] Most attorneys are familiar with the value of a chart or diagram of an accident scene in a tort case, or a map indicating the location of a comparable sale parcel in an eminent domain case. In these instances, the mere mention of the type of case immediately suggests the form of visual aid that is needed to assist in the presentation of the case.

Unfortunately, in a highway construction contract case, the type of chart, diagram, or other visual aid needed to illustrate plaintiff's or defendant's contentions is not so readily apparent. Some visual aids—such as a chart depicting the operations performed during the contract plotted against the time it took to perform—will be a basic tool, but such a chart is only the beginning. Moreover, because the usual contract case involves more than one claim or contention, several types of visual aids will generally be required. From experience, the authors have found that many approaches must be tried before the best visual aids can be developed that will graphically illustrate the parties' contentions. Although it is difficult to make an over-all summarization, it is probable that charts should be prepared in every case. Whether additional visual aids will be helpful will depend on the complexity of the issues presented, and whether those complex issues can be better explained by use of a diagram, chart, artist's rendition, or a model.

Charts Showing Performance of the Work

Many of the claims in construction contract litigation involve the time flow of the work. The owner may seek to assess liquidated damages because the work is not completed within the contract time. The contractor may seek compensation for State-caused delays. As a result, factual disputes will arise as to the effect of various actions on the

[12] On the admissibility into evidence of visual aids, see generally, 3 WIGMORE, EVIDENCE § 790 (Chadbourne rev. 1970). On the use and misuse of visual aids, see generally, Gardner & Mrovka, *Demonstrative Evidence and Audio-Visual Aids at Trial*, 8 U. FLA. L. REV. 185 (1955); Crocker, *Demonstrative Evidence Techniques*, 5 PRACTICAL LAWYER 43 (Jan. 1959); 3 AM. JUR. *Trials* § 377 (1965).

scheduling of the work. The litigants have a burdensome task in seeking to understand both the planned work schedule and the events that actually transpired. Their task of presenting to the court the anticipated schedule and the causal relationship between alleged culpable acts and the actual work progress is even more difficult. In both these tasks, the use of a chart or diagram that depicts both the anticipated progress of the contractor and his actual progress on the project can be very illuminating.

Contractor's Progress Chart.—The specifications of most public agencies require the contractor to prepare a progress chart showing the manner in which he intends to perform the major features of the work.[13] In most cases, the contractor is required to update the schedule as the work progresses.[14] The schedule may consist of a compilation of work items with contemplated commencement and completion dates. Certain agencies require more elaborate progress schedules which, in addition to commencement and completion dates, indicate the interrelationship between the various work items. This latter method of showing the work progress schedule is normally termed the Critical Path Method (CPM).[15] Regardless of the type of work progress schedule prepared, the litigants will find the schedule most helpful in developing and presenting their case.

Work Performance Chart.—For the owner, the most helpful chart will be one in which the contractor's progress during the project is plotted against the time it took him to complete the project. From this chart, for example, in the typical highway construction project, it will be possible to determine when the contractor began his rough grading operation, and, by use of a bar chart presentation, the amount of rough grading he performed each day. On the same chart the other work activities of the contractor can be plotted; for example, the amount of subgrade that he prepared each day, or the amount of concrete or plant-mix surfacing that he laid each day. The items of work portrayed on the chart should include all major construction items and all items in controversy. This visual portrayal of the manner in which the contractor performed the work will often present ideas for use in defense of the action. Once a chart has been prepared on the actual progression of work, it is possible to portray the contractor's proposed work schedule on a clear acetate overlay to illustrate how closely the contractor adhered to his originally proposed schedule. If he did not adhere to

[13] *See, e.g.*, Calif. Dep't of Transp., *Standard Specifications* § 8-1.04 (1975); MCBRIDE & WACHTEL, GOVERNMENT CONTRACTS § 26.70 (13).

[14] *Id.*

[15] For details on network techniques for work scheduling, see SHAFFER, RITLER, & MEYER, THE CRITICAL PATH METHOD (1965).

his original plan, it may be possible to develop other reasons for his failure than his alleged claim that such change was caused by the public agency's interference.

In addition, if the charts are reduced to a size that can be contained in a notebook, they will serve as a valuable aid to the attorney during cross-examination of the contractor's personnel. For example, if the contractor has claimed that his inability to place concrete was due to some fault of the State, the use of such a chart can show that the actual reason that concrete production did not progress satisfactorily was because of a breakdown in the concrete batch plant, or the failure of suppliers to deliver material, or other factors not the fault of the State. In such a situation, if an attorney relies on diary entries alone, it will be impossible for him to see the entire picture and to pick out all the areas of weaknesses during cross-examination. The use of a chart portraying the entire project enables the attorney in cross-examination to follow a witness's testimony about any part of the work on any day and question him intelligently on the events of that particular day.

Critical Path Schedules.—The use of CPM schedules as a means of substantiating construction contract claims before courts and contract claims boards has become widely accepted.[16] The advantage of the CPM schedule chart over the more traditional bar chart is that it is possible to illustrate the interrelationship between the various work items and demonstrate, for example, how a delay on one item affects other items of work. The CPM chart allows complex questions of cause and effect to be better understood by the attorney and graphically displayed to the trier of fact. For example, the problem of understanding and explaining the over-all effect of concurrent delays on two separate items of work is exceedingly difficult, especially when the owner is responsible for one delay and the contractor is responsible for the other. This problem is greatly simplified by viewing the schedule on a CPM chart in which the time relationship between the two items of work is displayed.

Although critical path techniques have an aura of mystery and complexity, they are, in principle, relatively straightforward.[17] Because the CPM chart does simplify complex problems, it may be given too much weight by the trier of fact—especially if it has been prepared by a digital computer. The litigants and the court may tend to view the chart as if it actually controlled the work progress. They may often ignore the fact that it is only a prediction of how the work will be performed and, as with any prediction, its value and accuracy depends on

[16] For a general discussion on the use of these schedules in contract litigation, *see* Wickwire & Smith, *The Use of Critical Path Method Techniques in Contract Claims*, 7 PUBLIC CONTRACT L.J. 1 (1974).

[17] An excellent primer on the subject is ASSOCIATED GENERAL CONTRACTORS OF AMERICA, CPM IN CONSTRUCTION (1965).

assumptions, not facts.[18] The party introducing a CPM schedule must not only be prepared to prove the accuracy of the CPM analysis, but must also show that it is predicated on assumptions that have some basis in fact.[19] Likewise, the party against whom the chart is introduced must be prepared to challenge its basic assumptions.

Tridimensional Charts

Charts showing the progress of the contractor during construction can, in most instances, be adequately presented on a surface or a two-dimensional chart. There are, however, some types of claims that can be better presented by means of a partial model or tridimensional chart.[20] Figures 2 and 3 show a type of tridimensional chart. In this instance, during construction of a highway project it became necessary to move the highway slightly to the south of its originally designed location.

[18] *See, e.g.*, LANE-VERDUGO, ASBCA 16327, 16328, 73-2 BCA Paragraph 10,271 (1973); Wickwire & Smith, *supra* note 16, at 5.

[19] Wickwire & Smith, *supra* note 16, at 13. *See also*, Clancy & James Construction Co., FAACAP 67-18, 66-2 BCA Paragraph 6066 (1967); Carl M. Halvorson, Inc., ENG BCA 2784, 73-1 BCA Paragraph 9900 (1973).

[20] *See, e.g.*, M. SPEAR, PRACTICAL CHARTING TECHNIQUES 244 (1969).

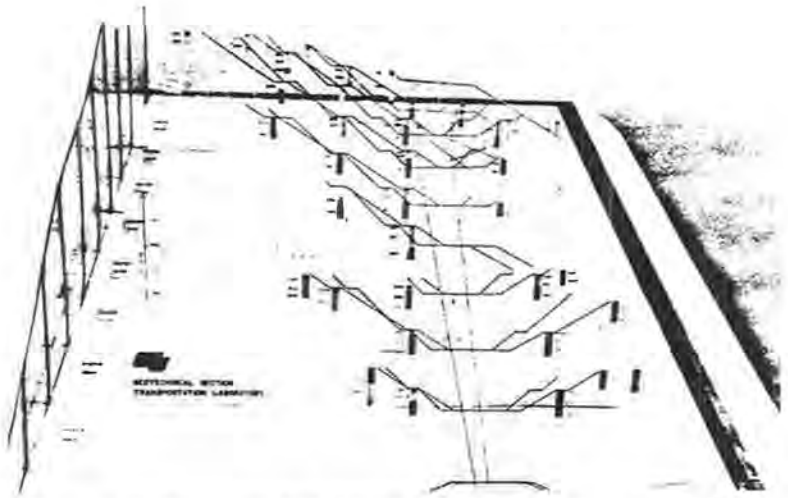


Figure 2. Tridimensional chart showing the original and relocated centerlines.

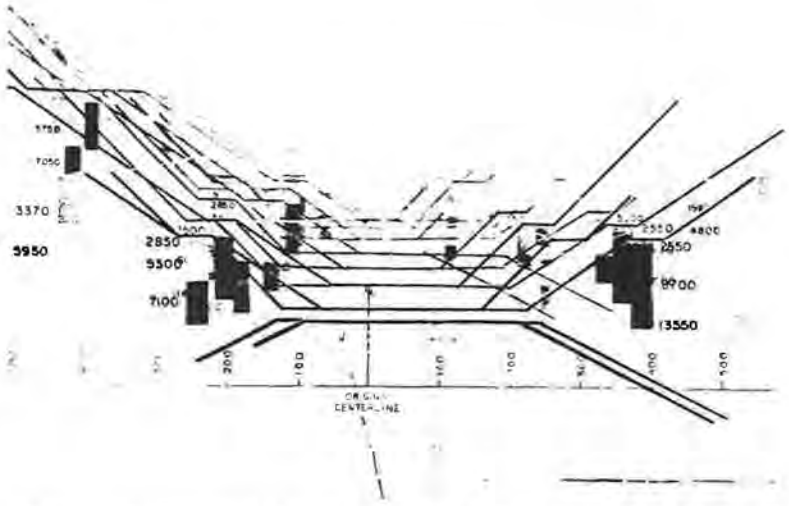


Figure 3. Tridimensional chart with plexiglass sections showing the highway prism and the type of material encountered. Rocky material is indicated by the darker areas on the bar charts.

The contractor contended that the change of the highway location caused him to encounter more rock excavation than he would have encountered had the highway remained in its originally designed location. The tridimensional chart illustrates the type of material encountered in the designed location and in the highway as moved. In the chart construction, the groundline cross-sections at 200-ft intervals were of transparent plexiglass through the contested area of the project. By means of tape, the centerline of the highway through the cut section was depicted both as designed and as relocated. Small bar charts were placed at either edge of the highway prism to illustrate the type of material encountered. The original tridimensional chart is in color, and the area of the highway prism, as originally designed and as relocated, can be clearly distinguished; in the black and white photographs contained herein, it is slightly more difficult to differentiate clearly between the two.

The advantage of this type tridimensional chart is that a person can actually look through the plexiglass sections and follow the highway centerline as originally designed and as relocated, and see the type of material encountered on both locations.

Photographs

Photographs taken during various stages of a highway construction project can often be helpful in preparing and presenting a case. Normally, a photographic record will have been prepared by both the public agency responsible for the project and by the contractor who performed the work. If a claim has arisen on the job, it will in most instances become the subject of particular photographic attention. Such photographs will, of course, be the prime source of photographic evidence relating to the claims. Unfortunately, the appearance of the project is constantly changing, and thus the photographs that are available from these sources may not have been taken at the right time to be helpful in portraying elements of a particular dispute. In these situations, it may be possible to obtain useful photographs from other sources. Some of these sources include:

1. Photographs taken by other bidders during the bidding process.
2. Photographs made by equipment suppliers or installers.
3. If the project has local news interest, photographs taken by local newspapers.
4. Photographs taken by the public agency for other than job-related purposes. For example, the Public Information Office of the Department of Public Works took a photograph of a project during construction for the cover of its monthly magazine. The photograph was the only one available that showed the contested item of work taken while the critical construction events were occurring. It substantiated the State's contention in a dispute relating to the construction item.
5. Photographs taken for other litigation purposes. For example, photographs are often taken of automobile accidents occurring in the project area or injuries to personnel on the job or for other tort-related claims. These photographs may be useful in contract disputes as well as in tort actions.

Figure 4 shows this type of photographic evidence. Both photographs were taken in connection with an automobile accident occurring on a project. Both photographs, however, are valuable in contract disputes involving the same project. The project involved the removal and relocation of palm trees along an existing highway. On completion of the project, there was a dispute about proximity of the trees to the traveled way. The contractor further objected to the State's strict enforcement of specifications which required holes resulting from removal of the palm trees to be backfilled the same day—before opening the lane to traffic.

In some instances, photographs taken after completion of the project can also be helpful. Such photographs should be taken as soon as the project is completed, and should emphasize the areas of the project that are the subject of the lawsuit. For example, during trial preparation of a particular case, it became apparent that the contractor would

Figure 4. Note the proximity of the trees to the traveled way. Accident demonstrates the necessity for strict enforcement of the backfill provisions of the contract.

contend that he encountered hard material and rock in the excavation of certain highway cuts. During depositions, he was uncertain as to where these areas were located. A complete photographic record was made of all cut slopes in the entire 4-mile length of the project. During examination at the trial, photographs were available to assist the witness in identifying every area of cut slopes. With the availability of this photographic evidence, the "difficult-rock excavation" issue soon dissolved and the plaintiff moved on to other phases of its case.

Photographic evidence in a construction contract case requires the same type of foundation as photographic evidence in any other case, and care should be exercised by the attorney to ensure the admission of photographs he intends to use.[21]

Renditions

Because it is difficult to grasp the complexity of changes occurring in the work or in the type of work performed through a verbal description, often an artist's rendition can portray the change in the work in a manner more readily understood by the trier of fact. For example, in a particular case, the contractor complained of a delay caused by a change order which modified the treatment of an intersection of a local road. In a verbal presentation, the difficulties encountered by the contractor in making the required changes could easily be exaggerated. An artist's rendition showing a cross-section of the highway in the area of the intersection as originally designed and as modified by the change order, together with a plan view of the intersection as changed with an overlay showing the original design, graphically illustrated the State's contentions that the changes had indeed been very minor. The illustrations used to present this point are shown in Figures 5 and 6.

Models

Preliminary Considerations.—One of the most dramatic visual aids that an attorney can use in presenting his case is a model. A model can provide a view of terrain or a demonstration of relationships and concepts that can be illustrated in no other way. Because a model is dramatic and captures much attention when it is brought forward, its use requires special consideration.

The first consideration is brought about by the very fact that the model takes and holds the attention of the trier of fact, whose immediate impression upon seeing a model is that it is designed to clarify the case. If the model serves this function; i.e., it demonstrates or illustrates facts, contentions, or opinions that enable the trier of fact to understand the case in a manner that would have been impossible without the model, the trier of fact will be grateful to the attorney for

[21] See note 12, *supra*.

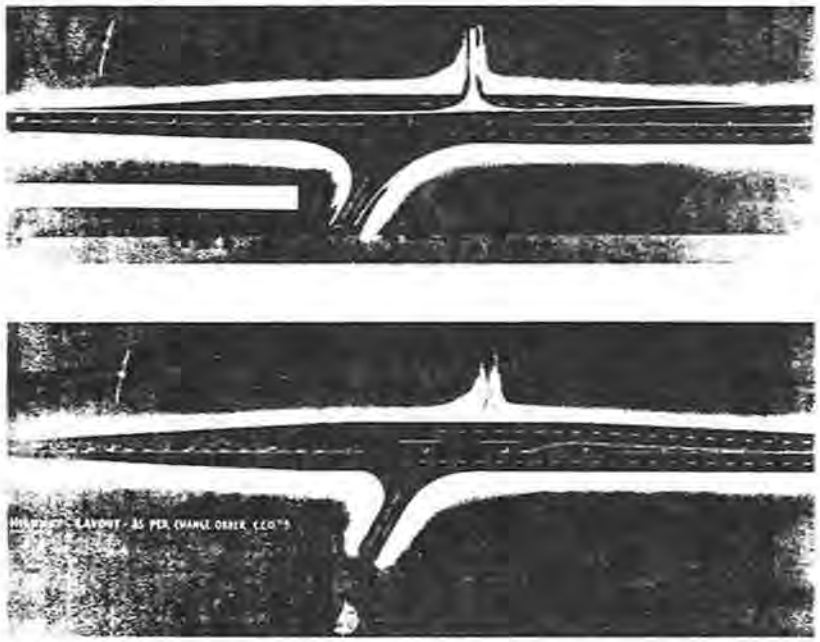


Figure 5. Intersection as originally designed is shown in upper photo and as modified by the change order in the lower photo.

Figure 6. A different artist's rendition of the same design as shown in Figure 5(a) shows the intersection as originally designed at left, and as modified by the change order at right.

using the model and for clarifying his understanding of the case. In these instances, the use of a model is justified. However, if the model does not fulfill the expectations of the trier of fact; i.e., it is merely illustrative and does not clarify the facts or contentions of the case as the trier of fact has been led to expect, the model can actually have a negative effect.[22]

Courts also are aware that models create a highly impressionable effect. Although models are generally admissible in evidence,[23] courts ". . . approach the admission of models, samples and things offered exclusively for illustrative purposes with wariness and circumspection, to the end that fact be not confused with fancy and artistic interpretations push aside and take over the role of truth unadorned." [24]

Another consideration is cost. Except for the most rudimentary type, models are expensive to construct, particularly when they are built to accurate scale.[25] The attorney must therefore weigh the cost of the model against its prospective benefits. In addition, he must anticipate how the trier of fact will react to an elaborate and costly model. Even without testimony as to its cost, the trier of fact is aware that such a model is expensive; and if it does not illustrate an important point in the case, he may feel its use was not justified and may conclude that its introduction was calculated to impress rather than enlighten. This consideration is especially relevant where the model is presented on behalf of a public agency. Here, care should be exercised so that it does not appear that the monied State is attempting to inundate the plaintiff.

Models in Highway Construction Cases.—Highway construction contract cases lend themselves particularly well to explanation by means of a model [26] because they usually involve cuts and fills, banked turns (i.e., superelevations), structures, and other three-dimensional features that are more easily shown by a visual presentation than by verbal testimony. Moreover, testimony relating to project features is more easily understood when a model is used by the witness to illustrate his testimony as it is given.

Before the model is constructed, the attorney should consider whether it will be introduced into evidence or whether it will be used merely to illustrate the testimony of a witness or expert. If the model is to be introduced into evidence, it must be properly verified as to accuracy.[27]

[22] The excessive use of demonstrative evidence in situations where such evidence serves no useful purpose; i.e., is used to appeal to the jury's emotions or to inflame the jury, will most likely harm rather than help one's case. Crocker, *Demonstrative Evidence Techniques*, 5 PRACTICAL LAWYER 43, 44 (Jan. 1959).

[23] *See, e.g.*, 3 WIGMORE, EVIDENCE § 790 (Chadbourne rev. 1970); Annot., 69 A.L.R.2d 424 (1960).

[24] State v. Gray, 64 Wash. 2d 979, 983, 395 P.2d 490, 492 (1964).

[25] 3 AM. JUR. *Trials* 391 (1965).

[26] *Id.* at 394.

[27] See note 12, *supra*.

The attorney should therefore be certain that the model is an accurate representation. If the model is built to scale, the scale must be accurate and undistorted.[28]

Although it is necessary that the model be properly verified as to accuracy, this need not necessarily be done by the one who prepared the exhibit.[29] However, the testimonial sponsor of the exhibit should verify for himself the accuracy of the model. He should verify in detail the height, width, and depth of the main features, particularly those parts that are critical to the witness's opinion or the contentions of the party presenting it. The witness should also have sufficient knowledge of the subject represented by the model to be able to verify that it truly depicts the subject represented.[30]

Figure 7 shows a model depicting a sequence of construction events that illustrate the State's contentions in a particular lawsuit. One of the plaintiff–contractor's causes of action involved his request for extra compensation because of the difficulty he encountered in building a culvert in a part of the construction area used by public traffic during construction. The contractor contended that the project could not be constructed without building the culvert after traffic was on the highway. The State contended that the culvert could have and should have been built before the old highway was taken out of use, which would have allowed construction without the traffic impediment.

A model was constructed to illustrate this contention through the testimony of both design personnel from the State and an expert retained by the State. The State's expert was one of the unsuccessful bidders on the project, who had planned to construct the culvert in the manner illustrated by the model. His plan provided for the construction of the culvert while traffic continued to use the old highway.

The model was constructed so that it could be taken apart and put together in two separate ways: (1) the manner in which the contractor actually performed the work, and (2) the manner in which the work should have been performed. Thus, it was possible to visually portray the feasibility of performing the work in the manner contended by the State. Moreover, the model illustrated that the primary reason for the contractor's difficulty was lack of planning; i.e., he performed the rough grading work which covered the old highway before he began construction of the culvert. The model is disassembled in photographs a through f to illustrate the manner in which the contractor actually constructed the highway improvement. Photographs g through i illus-

[28] *Id. See also,* San Mateo County v. Christen, 22 Cal. App. 2d 375, 71 P.2d 88 (1937).

[29] 3 WIGMORE, EVIDENCE § 793 (Chadbourne rev. 1970).

[30] *Id.* at § 794.

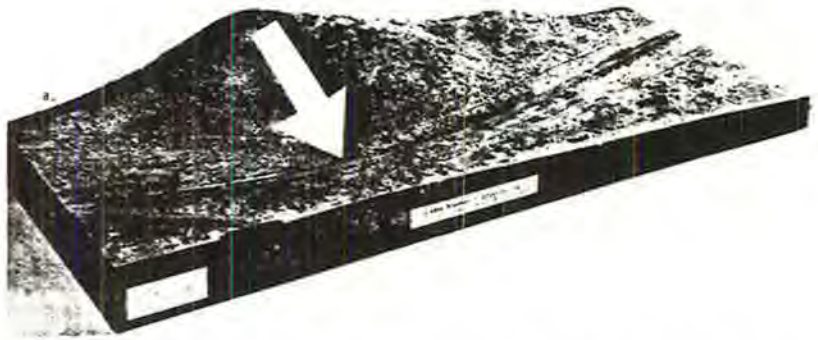
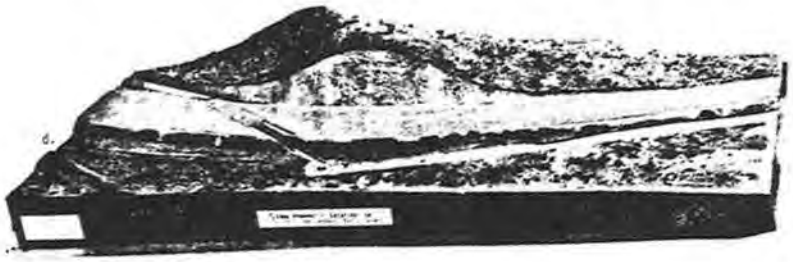


Figure 7. Model illustrating the sequence (a through f) in which the contractor actually performed the work and the sequence (g through i) in which the work should have been performed.



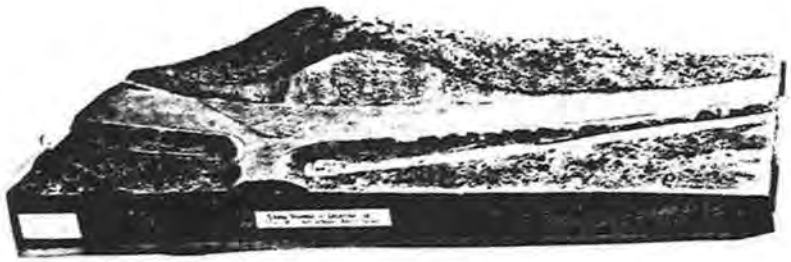


Figure 7 (continued).

Figure 7 (continued).

trate the manner in which the construction work should have been performed.

The contractor performed all the excavation required and the resulting fills covered the old highway. From the time the old highway was covered, he had to route traffic through the construction area. To adequately handle traffic through the construction area, the contractor found it necessary to place the paving base course, after which traffic was routed to the west side of the highway while the east side was excavated and half the culvert installed. When the east side of the culvert was completed, it was backfilled and covered with base paving. Traffic was then moved to the east side while the west side was excavated and the remaining portion of the culvert installed. Upon completion of the culvert on the west side, it was backfilled and base paving was replaced.

The State and its expert contended that only a portion of the excavation should have been performed to permit construction of the entire culvert while traffic continued to use the old highway (see arrow in photograph g). The remaining excavation could then be completed and base paving placed. This would permit traffic to use the completed section while the road connection was constructed.

Expert Witnesses

The Need for Experts

In any litigation, attorneys usually employ experts for two purposes: as consultants in case preparation and as opinion witnesses for trial. Construction contract litigation is no exception. Actually there is a greater need for such expertise in construction contract litigation than in other types of litigation, especially in the areas of bidding practices and construction performance.

Many of the suits brought on highway construction contracts are premised on matters that existed at the time of bid, such as a warranty [31] or misrepresentation [32] of conditions on which the contractor justifiably relied in preparing his bid cost estimates and methods of performance.

[31] *See generally,* United States v. Spearin, 248 U.S. 132, 63 L.Ed. 166, 39 S.Ct. 59 (1918); United States v. Hathaway, 242 F.2d 897 (9th Cir. 1957); Montrose Contracting Co. v. Westchester, 80 F.2d 841 (2d Cir. 1936); E. H. Morrill Co. v. State of California, 65 Cal. 2d 787, 423 P.2d 551 (1967); Wunderlich v. State of California, 65 Cal. 2d 777, 56 Cal. Rptr. 473, 423 P.2d 545 (1967); A. A. Baxter Corp. v. Colt Industries, Inc., 10 Cal. App. 3d 144, 88 Cal. Rptr. 842 (1970); Sandy Hites Co. v. State Highway Comm'n, 149 S.W.2d 828 (Mo. 1941); McCree & Co. v. State, 253 Minn. 295, 91 N.W.2d 713 (1958).

[32] *See, e.g.,* MacArthur Bros. Co. v. United States, 258 U.S. 6, 66 L.Ed. 433, 42 S.Ct. 192 (1922); Warner Constr. Corp. v. City of Los Angeles, 2 Cal. 3d 285, 466 P.2d 996 (1970). *See also,* 2 McBride & Wachtel, Government Contracts § 13.20(2); Note, *Misrepresentation in Public Contracts: Allocating the Risk of Loss,* 21 Syracuse L. Rev. 1004 (1970).

Expert testimony in such actions is usually necessary to determine the reasonableness of the contractor's reliance, the bid estimates of cost, and the costs actually incurred, including the influence of factors unrelated to the claim, such as inefficiency, method of operations, weather conditions, and the like, which may have contributed to his costs.[33] For example, in a claim for delay in which plaintiff–contractor contends that a portion of the work area is unavailable for initial grading operations, the defense may contend that, apart from the delay, a reasonable and more efficient method of operation would have been to commence work in another area, using perhaps different, better, or more efficient equipment. The defense may also contend that, as a matter of mitigation, the contractor should have adjusted his plan of operations to avoid the delayed area until it was available. Such issues and contentions can be litigated only through the use of expert testimony. In addition, expert testimony is required for issues involving interpretation of contract terms and custom and usage in the industry.[34]

An experienced contractor can normally obtain the needed expertise from his own staff. However, at the time of trial, his attorney will usually find it beneficial to obtain independent corroborating opinion testimony. In contrast, public agencies usually lack the expertise and experience associated with the preparation of detailed unit bid cost estimates and methods of performance, and reliance solely on an in-house expert who has had no outside contracting experience is risky, if not foolhardy. The court may not consider public agency personnel to be competent to testify about a type of costing and scheduling that he has never performed. In either event, in weighing the evidence, the court may well conclude that the contractor or his independent expert is more qualified or more reliable in these areas of opinion testimony.

Locating Experts

Before the recent advent of product-liability litigation, there were few engineers who considered themselves as expert witnesses for litigation purposes. Their involvement with the subject matter was usually limited to contacts with the subject matter before litigation was contemplated. Even today, engineers devoted to the area of product liability are usually trained and experienced in mechanical rather than civil engineering.

Thus, the attorney must seek out, and in effect train, experts. Often

[33] *See, e.g.,* F.H. McGraw & Co. v. United States, 130 F. Supp. 394 (Ct. Cl. 1955); Great Lakes Dredge & Dock Co. v. United States, 96 F. Supp. 923 (Ct. Cl. 1951); Associated Lathing etc. Co. v. Louis C. Dunn, Inc., 135 Cal. App. 2d 40, 286 P.2d 825 (1955).

[34] *See, e.g.,* 21 Am. Jur. 2d *Customs and Usages* § 37; Warner Constr. Corp. v. City of Los Angeles, 2 Cal. 3d 285, 466 P.2d 996 (1970).

his colleagues or client will suggest possible experts and consultants. Generally, engineers and construction personnel are not anxious to become involved in controversies between other members of their own professions, particularly where the action involves competitors or an agency with whom they do business. Therefore, the initial approach in securing such help is most important.

The client, or a staff member who is acquainted with the prospective expert, is probably the best person to initiate the first contact. In attempting to convince the expert that he should provide assistance, the emphasis should be placed on his duty to provide a public service for the court in its quest for the truth. It is often more productive to initially suggest employment as a consultant rather than as an expert witness. This may provide work-product protection from discovery of his views, opinions, and advice to the attorney.[35] More importantly, this will provide the attorney with an opportunity to assess the expert's potential abilities as a witness in litigation where he will be subjected to cross-examination and possible examination by the judge. Without previous courtroom experience, as is the usual case, the expert's testimony will appear to him, at best, as an ominous challenge, and to the attorney as a calculated risk. Many individuals, eminently qualified in their particular field of engineering, are unable to cope with the trauma of a courtroom scene. Usually this is because of a lack of courtroom experience, coupled with an inability to properly respond to examination.

Sometimes the engineer or contractor will agree to provide consultation, but will insist that it be without fee because he is not in the business of providing consultations on litigation. This may be because he believes that all that is required of him is to provide a few opinions (nothing could be further from the truth), that if he is not paid he is free to withdraw when the controversy becomes heated, or he believes that receiving compensation indicates a biased point of view.

The attorney should impress on the expert that no one should or will dictate his view or his testimony; that the compensation is for his time, experience, and expertise, and furthermore, that compensation is an acceptable and common practice. The attorney should also impress on the expert that all that is expected of him is to take the time to review the matters thoroughly and give his best judgment. The judge needs and expects independent expert help in interpreting and applying construction contract language to various factual settings and in establishing the applicable custom and usage in the industry.[36]

[35] See note 2, *supra*.

[36] See note 34, *supra*. Also, it should be noted that in some jurisdictions, as in California, the test for the admissibility of parol or extrinsic evidence is no longer limited to ambiguous contract provisions. Parol evidence can be admitted to prove a meaning to which the language of the instrument is reasonably susceptible. Pacific Gas & Elec. Co. v. G. W. Thomas Drayage, etc. Co., 69 Cal. 2d 33, 442 P.2d 641 (1968). *See also*, 3 CORBIN, CONTRACTS § 579 (Supp. 1971).

As noted earlier, bidding often becomes an important aspect in contract litigation as to issues of warranty, misrepresentation, reliance, and damages. The highway construction bidding process involves very specialized skills, and the method used by the contractors in the bidding process may vary from State to State and from agency to agency within the State because of differences in the specifications and practices. Because of these variances, it is best to obtain an expert who is familiar with the bidding process at the time and place the subject contract was bid.

The individual who is usually the most familiar with the bidding process is one of the unsuccessful bidders, his estimator, engineer, or project manager. They are already familiar with the project and the specifications; have prepared cost estimates for each operation; have worked out a method of performance and schedule of operations; and have had the confidence and conviction of their conclusions to submit a firm bid for the work. Generally, the unsuccessful bidders will retain their bid estimate documents for future reference, and also, as competitors in the area, they most likely have kept a watchful and inquisitive eye on the project as work proceeded.

Such a witness, who has acquired personal knowledge and opinion without litigation in mind, will be a powerful witness. However, if none of the bidders can support the attorney's contentions, a reexamination of his position on the claim may be in order.

It has also been observed that, however knowledgeable and competent the personnel of the highway or transportation department may be, their expertise on the bidding process will never equal that of one who has bid on many projects, and in particular, one who has prepared a bid on the same project. Likewise, the claimant can also make valuable use of such persons to fortify and corroborate the reasonableness of his bid. The following are elements of the bidding process with which the contractor expert can provide assistance:

1. Determine if any incorrect or improper assumptions were made by the plaintiff–bidder in the preparation of his bid which may have caused the plaintiff to submit a bid that was imprudently low.
2. Analyze critical path or progress charts for performance of the work made by the plaintiff–bidder at the time of the bid.
3. Determine if the order of work proposed by the plaintiff–bidder was reasonable and logical.
4. Determine whether the production of materials anticipated by the plaintiff–bidder was valid; whether the plaintiff–bidder anticipated using the proper equipment to process the work; and whether his anticipated rates of production were reasonable and realistic.

5. Where plaintiff–bidder has submitted an unbalanced bid, interpret the financial effect that such unbalancing had on the issues of liability, reliance, and damages.

6. Supply the attorney with his bid documents which will be helpful in the preparation of the case. These documents often contain photographs of the work site at the time of the bid, test reports made by the bidder, or notations of conversations with suppliers and others.

7. Aid in interpreting key specification requirements, especially specific terms or references that have acquired a special meaning in the industry as a part of the developed custom and usage.

If none of the unsuccessful bidders are available as consultants, the attorney may wish to obtain their opinions and records by deposition. This is rarely done without some advance knowledge of the expected testimony, because an attorney may be providing his adversary with an effective witness who may otherwise be unavailable. More importantly, the subpoena may initially and unintentionally cause the expert to favor the opponent. The expert may resent this invasion of privacy or feel that his opinions will be unfairly criticized. This approach should be reserved for those instances in which an expert does not wish to be aligned with either his competitor or the contracting agency and the attorney has prior knowledge that he will be a helpful and effective witness.

Depositions of competing bidders are usually avoided in construction contract cases. This avoidance is somewhat unusual because, in the ordinary tort case, witnesses to automobile accidents are routinely deposed. But competing bidders are more than eye witnesses; they are qualified experts who are entitled to give opinions on matters that can be crucial to a case. Of course, where the opponent has secured bidders as experts favorable to his position, the attorney is entitled to, and should, depose them as to their factual knowledge and background, as he would with any witness. In most jurisdictions, upon a showing of good cause, the attorney is entitled to examine expert witnesses employed by the opponent for testimony at the time of trial.[37]

Handling and Preparing Expert Engineering Witnesses

General.—In preparing an expert witness, the primary objective is to inform him on the facts and issues involved in the lawsuit. The expert cannot perform well, on or off the stand, without an appreciation of all the issues involved. Even more disastrously, he can unwittingly destroy the attorney's contentions by failing to qualify his opinions or answer questions within the context of the issues before the court. For example, if the issue involved is the purchase of insurance, a witness's opinion that the Golden Gate Bridge may collapse tomorrow would be

[37] *See generally,* Annot., 86 A.L.R.2d 138 (1962).

pertinent; however, the same statement in the context of a design-adequacy issue would be highly misleading. If the attorney inadequately prepares his expert, the opponent may be able to use the witness to question the credibility of the attorney's contentions. For example, the opponent may ask the expert, "Do you know of any situation where an engineer would be entitled to reject embankment material without initially running a compaction test?" After the witness has answered "absolutely never," the attorney will try to explain to him, out of court, that in this case the resident engineer rejected the material because he had witnessed the contractor end-dump the material into a 5-foot hole rather than compact it in the required 8-inch lifts. Any belated explanation on redirect will only reemphasize the point, and can further damage the credibility of the witness's remaining testimony. If experts are informed of all relevant facts and issues in the case before their testimony, the attorney can avoid these dangerous, and often devastating, results.

When preparing the engineer witness, it is important to impress upon him the significance of the courtroom as an arena for resolving engineering disputes. He must realize that basic principles and facts which he has always regarded as unimpeachably true may be questioned. Further, he should be aware of the different conceptual bases that exist between the legal and engineering professions.

Engineering experts inexperienced in the courtroom arena often assume that their role is limited to merely dispensing facts to the court that will automatically result in a decision. This naive assumption ignores the true nature of the adversary system of justice. If the attorney informs the engineer that the outcome of the case can or will be influenced by the form, demeanor, capability, and credibility of the witnesses, the engineer often considers this observation to be an unfortunate reflection of the judicial system and attorneys. The attorney's initial task is to convince the engineer of the importance of his role as a *credible* witness. The engineer often has a tendency to believe that there is only one correct solution to an engineering problem. The attorney knows, with equal conviction, that there is no such phenomenon as the perfect case or there would be no claims or contentions in controversy. The attorney is aware that he can only predict an outcome; he must advance, at times, an imperfect case to the court, acting by and through his witnesses. The witness must understand that it is his task, as well as the attorney's, to convince the court that his position is correct and the opponent's position is erroneous.

In the courtroom, an expert's answer to an engineering question or other hypothetical question is usually predictable and, in fact, anticipated by the jury. Although the answer is important for the record, it is usually not the answer itself that resolves critical issues in the case. Other factors influence a jury far more, such as the engineer's experience and background, his courtroom demeanor, and his over-all credibility.

For example, if a group of engineers were given a long column of figures to add, all would agree that there is only one sum. If one were interested in the total, this would be the most important fact. However, if each participant were given only a few seconds to add the column, it would be expected that each participant would have a different answer. In attempting to decide the best answer from the testimony of each, the engineer may begin to appreciate the task of the trier of fact. The judge or jury will not be concerned with the answer itself but with the factors that influenced each particular answer: How did each approach the problem? Did he scan the more significant figures or attempt to add one plus one in the time-honored arithmetical exercise? Did he make a sincere attempt? Has he had any past experience in rapid calculations? And probably most significantly, how much confidence and conviction does he seem to have with his own answer? Such an example may give the engineering witness some insight into how a jury decides the correctness of contentions in unfamiliar technical matters.

An attorney who has an articulate and perceptive witness, who can easily grasp the import of a question and recognize its proper context, is in an advantageous position. These qualities are, to a certain extent, highly individual characteristics; however, an attorney can, through thorough preparation, cultivate these qualities in a witness. An effective trial preparation technique involves an attorney cross-examining his own witnesses to sharpen these qualities. In addition, the traditional pitfalls of proof, possibility, and probability should be explored with the witness. No engineer can prove that the sun will rise again tomorrow, but few doubt that it will. Proof to the engineer, as with the scientist, usually means documentation to a factual certainty. The statement, "I can't prove the truck was there," ignores the fact that the witness himself saw it. Or more typically, the comment, "I can't prove it; it's his word against mine," fails to recognize that his word is proof and suggests that his own recollections are unreliable.

Similarly, the expert must recognize that his opinion is evidence and proof. The courtroom measure of proof is a matter of persuasion and not the 100-percent certainty demanded by the scientific community.

Finally, the engineering expert must appreciate that it is his task to persuade and convince the court and jury that his opinions will result in the best and correct solution. The expert should never be content to rest his testimony on harsh technical specifications or strict contract provisions; he should attempt to understand the underlying policy and purpose behind such specifications and contract provisions. Engineers, contractors, and business people in general often tend to rely solely on the written contents of a contract, without exploring the purposes behind each provision; whereas a judge or jury will consider these factors to avoid the harsh result that would follow if a party were held to a strict and literal compliance with a particular contract provision. If the engineer understands the policy behind the technical provision, he

will be less likely to rely on a mere recital of the provision itself. Moreover, in most instances there is a valid and salutary purpose to be served by each contract provision, harsh as it may seem out of context from the remaining provisions of the contract. This is particularly true in the case of contracts subject to the competitive bidding requirements of public agencies. The role of an attorney is to ensure that in answering questions the expert puts into proper perspective the purposes that are the foundation for a particular contract provision, rather than have the expert rely solely on the provision itself.

Preparing the Engineering Witness for Depositions Prior to First Session.—1. The attorney should obtain copies of all correspondence relating to the claims that will be referred to during the deposition. He should furnish copies of these documents to the witness for his review. In addition to the witness's own correspondence, he should be given copies of other correspondence and documents which he saw or considered during the course of the job. However, the witness should be advised not to review or study documents that were not his concern during the course of the job, because the opponent may be entitled to see all documents that the witness reviewed in preparation for his deposition.[38]

Moreover, the witness should limit his review to those materials furnished by the attorney, or inform the attorney of any additional materials the witness has read or reviewed in preparation for the deposition.

Of course, not to be ignored is an approach favored by some attorneys of supplying an "unrefreshed" witness, that is, allowing the opposition to depose the witness as he finds him and avoid refreshing his recollections until preparation for trial. Presumably, this will provide the witness with greater flexibility and latitude to change, modify, or explain his testimony at trial, with the benefit of reflecting on the circumstances subsequently developed by either side. This technique does make the opposing attorney's examination more difficult and time consuming, but avoiding conflicts and inconsistencies should be preferred to providing handy excuses for prior inconsistent testimony.

2. The witness should prepare a résumé of his educational background and work experience. He should set forth in narrative form his involvement in the portions of the work that gave rise to the claims. In preparing this narrative, he should include relevant excerpts from his diary, or the diaries that others under his direction have prepared, which relate to the claim. He should also list any photographs or other

[38] FED. R. EVID. (R.D. 1971) 612 provides for the production, prior to a witness's testimony, of writings used to refresh his memory. *See also* CAL. EVID. CODE § 771 (West 1971). *See generally*, Kerns Constr. Co. v. Superior Court, 266 Cal. App. 2d 405, 72 Cal. Rptr. 74 (1968).

materials that pertain to the claims generally or to his involvement specifically. This will help the attorney prepare the witness and anticipate the questioning.

First Session.—The purpose of the first session is to become acquainted with the witness, to establish the extent of his involvement in the claim, and to explain to him the legal process in general and the deposition process in particular.

1. The attorney should allow the witness to describe his involvement in the claims in his own words. The use of question and answer techniques should be avoided at this time. The attorney should be patient in permitting the witness to describe, in such detail as the witness desires, his activities involving the claims.

2. In most instances, the witness will be aware of the basis of the claims that are the subject of the lawsuit. However, the attorney should still review each claim in detail so that the witness will understand and appreciate the attorney's perspective. The role of the attorney should be explained, and in particular, it should be stressed that both the witness and the attorney are on the same side and thus their common objective is to present the facts relating to the claim accurately, truthfully, and objectively. It is also important to obtain information about matters that may adversely affect the witness's testimony. Witnesses tend to withhold facts that they feel are adverse to their position regarding the claims. This tendency is more pronounced in the case of an employee, because he will often feel that if he discloses adverse information he will lose the support of the attorney or will displease his employer. The attorney should assure the witness that there is never a perfect case, and thus if there are any adverse facts which might affect his testimony on the case, it is better to reveal such facts immediately because the greatest threat arises when such adverse information comes as a surprise later in the trial. The attorney should make it clear that such information will not affect his attitude toward the witness or the claim. At this first session, it is important to gain the confidence of the witness so that he will candidly divulge all information. This will insure that the attorney will not be surprised at trial, and the claim or defense jeopardized.

3. At the conclusion of the first session, there will be areas relating to the claim about which the witness will need further information and preparation. He should be requested to further prepare before the next session. Normally, because the witness knows he is going to testify at the deposition and at the trial, he is motivated to be an effective witness. The attorney should emphasize to him that further preparation will increase his effectiveness as a witness.

4. Unless the witness has had prior deposition experience, he will be unsure of the mechanics of the deposition. The attorney should thoroughly explain the procedures to him. If prior depositions are available, it can be beneficial to provide him a copy to review. Depositions taken in other contract claim actions will be even more helpful.

Second Session.—1. At the beginning of the second session, the attorney should request any further information that the witness has obtained since his first session.

2. This second session, and subsequent sessions if more are needed, should deal with his role as a witness. In most instances, it will be his first experience as a witness; therefore, it is desirable to discuss with him what he is likely to encounter at the deposition and how this deposition procedure will differ from the trial. He should first be provided with general instructions that serve as a guide to any witness.[39] He should be warned that he must fully understand each question before he answers. It is not sufficient that he has a vague notion of the matter on which the questioner is probing. He should be aware that he can have any question repeated or rephrased if he does not initially understand it. The witness should be advised that if the interrogating attorney either omits or misstates a crucial fact in the question, which fact is necessary for a proper answer, such mistake is rarely inadvertent or innocent. Engineering experts will often assume that the questioner is acting in good faith. The witness should be cautioned that he must be wary of every question that is not clear or understandable, because the opponent's attorney will often intentionally pose a vague question to draw out the witness. The witness should always ask to have such a question repeated or clarified before he attempts to answer.

3. The attorney should remind the witness that he does not have to answer a question "yes" or "no" if he cannot do so. Even if he does answer "yes" or "no," he may explain the answer. The techniques of the deposition process should be explained to the witness. Although the deposition appears informal, the witness is under oath as he would be in court; thus, his answers should be given in the same manner as in the courtroom. The attorney should advise the witness to listen carefully to any objections he may make. Often, the cause of the attorney's objection should also concern the witness. The witness should be cautioned that he should only provide answers that are based on his own personal knowledge. If he does not have enough personal knowledge to answer, he should say so.

4. The attorney should explain the technique of using a document to refresh the recollection of a witness. If the witness is asked to refresh his recollection, he should not unwittingly say that he does not recall anything further than what is contained in the document itself. Rather, he should say that at the present time he has no further recollection than what is contained in the document. He should then state that

[39] *See, e.g.*, 5 AM. JUR. *Trial* § 888-906.

other documents or discussions might further refresh his recollection. The witness should be advised that he must not take any documents or notes to the deposition or to the trial. Any documents he may need should be only those supplied by his attorney.

5. The witness must be aware that he is expected to be knowledgeable in those areas in which he was directly concerned. He must be able to respond to questions in that area. He does not have to be an expert in those areas of his responsibility in which he relies on the expertise of others. He should be careful to answer on the basis of his own knowledge and not on what he has heard from others.

6. After the general discussion, the witness should be subjected to a question-and-answer session so that the attorney can evaluate how well he answers questions. The attorney should comment on the witness's performance as the examination progresses. On completion of the general questioning, the witness should be cross-examined on likely topics to be covered in the deposition. The cross-examination should be as rigorous as possible. The witness should be posed embarrassing questions; his truthfulness impugned, his veracity impeached, and his powers of recollection questioned. In general, it is better to subject the witness to a more thorough examination than is anticipated at the deposition or trial. The witness should be informed that this examination is a test of his ability to respond under pressure, and it will sharpen his awareness of the significance of his answers and the questioning techniques that may be used by the opposing attorney.

Organization of Case Material

In preparing and organizing the case, the attorney should prepare a workbook in which to organize his ideas and comments relating to the action. A loose-leaf binder with tabs dividing areas of inquiry is quite useful. Notes on a given topic can then be inserted into the appropriate section for later review and organization. Suggested headings and subheadings are listed below. Each individual case will suggest other categories:

Chronology
Records Index
Discovery
Meeting Notes
Law
Things to Do
Issues and Subjects
Witnesses

As new ideas are developed or new cases located, notes thereon can be filed with each heading. Usually, an attorney will add further headings and subheadings. Some attorneys devise a numbering or color coding system for each category, so that notes or documents can be appropriately marked and filed. As trial approaches, this workbook will serve as a basis for supplementing and developing the trial folder [40] which will be organized much like the stages of the trial itself:

Jury Selection
Opening Statement
Cross-Examination—Subjects and Witnesses
Defense—Subjects and Witnesses
Rebuttal
Argument
Instructions

At the conclusion of each day of trial, the attorney should briefly summarize each witness's testimony and note the significant points that should be reemphasized and developed at the time of argument, and the weak points that should either be refuted or explained further.

The use of microfilm and computers can play an important role in the preparation of a major case. Of course, their use will depend on the needs of the case, their availability and cost, and the individual attorney's interest in or prejudice toward the use of such devices.

Microfilming of an opponent's records is always an efficient means of wholesale copying, and it has the advantage of permanency, compactness, and completeness. For a typical major case, it is best to copy all the opponent's construction records because it cannot always be anticipated what material will become relevant at a later stage. It should also be kept in mind that if copies are made of only selected documents the opponent will be aware as to the importance the attorney places on those records.

Usually, at least three printed copies should be made of all microfilm. One copy will be retained for exhibit use, and the other two as work copies. These copies should be serially numbered in the order they appear on the microfilm for better identification and retracing. Copying and numbering records is also helpful. One work copy can be kept in serially numbered form, and the other copy can be compiled by subject matter or issue. Again, the permanent number will always allow the attorney to refer to its origin and its location in the microfilm.

The use of a computer to index or file the records should also be considered.[41] For example, an index program can be based on a library card system of author, title, and subject. Author cards are used for names, title cards for nature of the document, and subject cards for the significance or abstract of the document. With the use of asterisks and

[40] For a helpful discussion on the trial folder, *see* Luvera, *The Trial Notebook*, 19 PRACTICAL LAWYER 37 (1973).

[41] For a more complete discussion on the use of the computer, see Freed, *Machine Data Processing Systems for the Trial Lawyer*, 6 PRACTICAL LAWYER 4, 73 (1960).

other symbols, names can be differentiated between authors, recipients, carbon copy recipients, and names mentioned in the text. The author–title–subject printout arranged numerically by page provides a complete table of contents to the documents. Another printout can alphabetize the names. Thus, for a deposition or trial, a printout identifying every document in which the person's name is mentioned will be available.

With proper programming, title and subject cards can be alphabetized for each word, providing a word index together with its context. For example, CONTRACT CHANGE ORDER would appear three times throughout the printout, alphabetized as follows:

Contract CHANGE Order
CONTRACT Change Order
Contract Change ORDER

Thus, a search for any one of the words in the title would lead to the document number for use in obtaining a copy.

This same system can also be used to index interrogatories and depositions. Special printouts can be ordered for each category as well as a master printout. This will allow the attorney to rapidly locate a particular interrogatory about a given subject or individual, or this same subject or name can be located in the master printout covering all documents, depositions, interrogatories, and the like.

More elaborate computer services are available,[42] but to date this library system has been most useful in locating documents and isolating records about specific individuals.

PLEADINGS AND MOTIONS BEFORE TRIAL

The Complaint and the Answer

As opposed to what is broadly classified and discussed hereinafter under the heading "Affirmative Defenses," the complaint and answer in construction contract litigation are rather traditional and straightforward. As with any cause of action, the complaint should set forth the facts regarding the particular change, delay, misrepresentation, warranty, act of the engineer, nonpayment, or whatever gives rise to each claim. Normally, the claims will have been extensively detailed and discussed by the contractor with the agency or contracting officer as a part of the contract administration. These same facts should more than suffice for the ordinary contract complaint, provided the necessary elements for breach and conditions precedent are also alleged. Similarly, a general denial of the essential elements will place the action at issue. Of more concern to the answer are affirmative defenses, the extent they must be alleged, and the extent they should otherwise be alleged.

[42] *Id.*

Affirmative Defenses

The appendix includes an exhaustive list of potential defenses. Some are affirmative defenses that should be pleaded in the answer. Others are conditions precedent to the plaintiff's cause of action, and their absence can be challenged by a motion for summary judgment or possibly by demurrer. Most defenses, however, cannot clearly be placed in one category or the other, and the defendant must choose whether or not to raise them by answer. The danger of omitting them in an answer is that the court, unfamiliar with such assertions, will classify them as affirmative defenses or conclude that it is unfair to not disclose the intended defense. However, the unnecessary inclusion of these defenses may cause the court to place the burden on the defendant to produce and introduce evidence which might otherwise have been avoided. The natural tendency is to include much of this matter in the answer because the failure to plead an affirmative defense results in a waiver of such defense,[43] whereas the over-generous pleading of defenses results only in unnecessary discomfort.[44] However, careful drafting of the answer can obviate some discomforting effects.

The most difficult task is to thoroughly review and investigate the case to be certain all affirmative defenses are included in the answer. Because the answer must be prepared shortly after the filing of the complaint, the attorney has a limited opportunity to thoroughly investigate the case. Thus, the timing of the answer itself occurs when the attorney is least familiar with his case.

It should be noted that defenses that challenge the plaintiff–contractor's cause of action, such as his failure to give proper notice, can be raised at the commencement of trial through a motion to exclude the introduction of testimony.[45] Such a motion can be made even though the same point has been previously raised by demurrer or motion for summary judgment and such challenges have been rejected by the court. The early and vigorous pursuit of these defenses is emphasized because, although such defenses may not succeed in excluding the testimony, it does present to the trier of fact a psychological hurdle that the plaintiff must overcome. Experience has shown that, whereas the judge may be reluctant to decide a case on a pretrial motion, he does not have the same reluctance after he has heard the evidence. Actually, a technical

[43] An affirmative defense ordinarily must be pleaded in order to raise it at trial. If it is a "disfavored" defense, it may be deemed waived if not raised at the first opportunity to do so. *See, e.g.,* 71 C.J.S. *Pleading* § 101; Kelly v. Upshaw, 39 Cal. 2d 179, 245 P.2d 23 (1952).

[44] If the defendant includes in his answer an affirmative allegation that a condition precedent to the cause of action has not occurred, the defect in the complaint can be cured under the doctrine of aider. *See, e.g.,* 71 C.J.S. *Pleading* § 589; Miller v. Pacific Constructors, Inc., 68 Cal. App. 2d 529, 157 P.2d 57 (1945).

[45] *See, e.g.,* 75 AM. JUR. 2d *Trial* § 177 *et seq.*

defense can often provide the court with a convenient vehicle for deciding in favor of the defendant where the judge has not been convinced on the merits of the claim. It is therefore well to keep such defenses fresh in the judge's mind. Should the judge ignore these defenses and decide in favor of the plaintiff, the groundwork has been laid for appeal.

It should also be noted that provisions in a contract which require, for example, a contractor to give notice of claims, are often viewed as mere technical defenses, and in some instances the contractor has not been required to comply with such provisions. There are cogent reasons why notice requirements are included in a contract and equally strong reasons for their strict enforcement.[46] Those charged with administering the contract should be advised that in every instance the contractor should be required to comply with the notice provisions before a claim is considered. Furthermore, they should be advised that, if compliance with the notice provisions is not required in every instance, the court may well determine that there has been a waiver of such requirements.[47] It is therefore essential that the notice requirements be uniformly and strictly enforced. Otherwise, this defense may be lost as to all claims.

The two affirmative defenses most often available to the defendant are failure to file timely notice and finality of the engineer's determination.

Contract Protest Provisions

Construction contracts customarily contain provisions that require contractors to provide formal written notice of claims or contentions whenever the contractor believes he is being required to perform work outside or beyond the requirements of his contract.[48]

The purpose of the protest provision and notice of potential claim is to alert the public agency at an early date that the contractor intends to file a claim with regard to certain work being performed and to allow the agency to modify its order or requirements to avoid or mitigate any damage, if the claim is meritorious, at an early date. Without such a

[46] For a discussion of those reasons, *see* Sweet, *Extensions of Time and Conditions of Notice: California's Needless Restriction of Contractual Freedom*, 51 CAL. L. REV. 720, 725 (1963).

[47] 3 CORBIN, CONTRACTS § 756 (1960).

[48] *See, e.g.*, Sweet, *Extensions of Time and Conditions of Notice: California's Needless Restriction of Contractual Freedom*, 51 CAL. L. REV. 720 (1963). Public contracts typically contain a notice provision with which a contractor must comply if he wishes to object to a change order work request. Such provisions require a contractor to ". . . submit a written protest to the [state] Engineer within 15 days after the receipt of such approved contract change order." Calif. Dep't of Transp., *Standard Specifications* § 4-1.03A (1971). *See also, Id.*, § 9-1.04 (1971), for a typical contract provision that requires written notice of a claim "within 15 days after the happening of the event, thing or occurrence giving rise to the potential claim."

provision, a contractor is provided with the advantage of developing his claims after the work is completed with the aid of perfect hindsight.

During the course of construction, a contractor can be expected to register many verbal or informal complaints with the resident engineer or contracting officer. These complaints can be categorized roughly into three types:

1. Typical "gripes" where the contractor feels he has been the victim of some circumstance, perhaps of his own creation, and he knows he has no redress but he wants the engineer to appreciate the burden imposed.
2. Claims where the contractor is "testing" the engineer to see what he can "get away with."
3. Claims of a serious nature where the contractor truly believes he has a meritorious and legitimate claim which he intends to pursue.

The notice of potential claim is intended to separate the serious claims, and receipt of the notice enables the public agency to make an early evaluation and take steps to pay or avoid meritorious claims. The notice will also alert the agency to compile adequate records of the contractor's costs relative to the claim so that, if liability is accepted later or determined by a court, the amount of the claim can be more readily calculated.[49]

This early notice to the public agency is mandatory,[50] and failure of the contractor to comply with such notice requirements should be raised promptly and energetically by the public agency in the event of a suit.

Finality of the Engineer's Determination

Almost all public construction contracts contain a provision which states that the determination of the engineer or architect as to a matter arising under the contract is final and conclusive.[51] This contractual provision is one of the basic defenses that a public agency will assert in a highway construction contract action. In the absence of fraud, bad faith, or abuse of discretion, these provisions have generally been upheld by the courts.[52]

Courts have stated that contractual provisions providing for the

[49] "It is the intention of this Section . . . that differences between the parties arising under . . . the contract be brought to the attention of the Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken." Calif., Dep't of Transp., *Standard Specifications* § 9-1.04 (1975).

[50] *See, e.g.*, CAL. CIV. CODE § 1511(1) (West 1974 Supp.); 3 CORBIN, CONTRACTS § 727 (1960). *But see* Peter Kiewit Sons' Co. v. Pasadena School District, 59 Cal. 2d 241, 379 P.2d 18 (1963) and General Ins. Co. v. Commerce Hyatt House, 5 Cal. App. 3d 460, 85 Cal. Rptr. 317 (1970), which allowed claims despite a lack of notice. These cases decided prior to amendment of CAL. CIV. CODE § 1511.

[51] *See, e.g.*, 3 CORBIN, CONTRACTS § 652 (1960).

[52] *See, e.g.*, Metropolitan Water Dist. v. Marquardt, 59 Cal. 2d 159, 379 P.2d 28 (1963), where the court stated:

settlement of disputes are binding on the parties; and where an engineer or architect is given the right to make a determination under the contract, such determination is final and conclusive in the absence of fraud, bad faith, or gross mistake.[53]

The engineer or architect's determination cannot be impeached by a mere showing that it was incorrect or an error of judgment;[54] the mistake must be tantamount to fraud or bad faith.[55]

Generally, the authority of the engineer or architect to make determinations is quite broad and extends to interpretations of applicable contract provisions as well as determinations of facts.[56]

In federal cases, the finality of the administrative determination has been enacted into statute by Congress's adoption of the Wunderlich Act.[57] The Wunderlich Act is, of course, binding only in federal cases, but the cases arising under this Act are sometimes used to support contentions made in State public works contracts, and where this is done, some caution should be observed. Sometimes the engineer's determination in a State contract case is attacked on the basis that in making his determination, the engineer did not afford the contractor procedural due process, citing cases decided under the Wunderlich Act. Although federal cases under the Wunderlich Act require an administrative hearing, with procedural due process implicit in such hearing,[58] this is not true in the engineer's determination under a State contract.[59]

. . . A contract may provide that conclusive factual determinations may be made by the government or its officers, and such determinations will be enforced in the absence of bad faith. (United States v. Wunderlich, 342 U.S. 98, 100 [72 S.Ct. 154, 96 L.Ed. 113]; United States v. Moorman, 338 U.S. 457, 461–462 [76 S.Ct. 288, 94 L.Ed. 256].) . . . *Id.* at 196. For a collection of cases, see 3 CORBIN, CONTRACTS § 652 (1960); Annot., 54 A.L.R. 1255.

[53] *See, e.g.*, United States v. Wunderlich, 342 U.S. 98, 96 L.Ed. 113, 72 S.Ct. 154 (1951).

[54] *Id.* at 100. *But see* Congress' response to this decision in 41 U.S.C.A. § 321 which provides that "[n]o provision in any contract entered into by the United States, relating to the finality or conclusiveness of any decision [by a government officer] . . . shall be pleaded in any suit now filed or to be filed as limiting judicial review of any such decision to cases where fraud . . . is alleged: Provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or is not supported by substantial evidence." United States v. Lennox Metal Mfg. Co., 225 F.2d 302 (2d Cir. 1955).

[55] United States v. Wunderlich, 342 U.S. 98, 96 L.Ed. 113, 72 S.Ct. 154 (1951); A. Teichert & Sons, Inc. v. State of California, 238 Cal. App. 2d 736, 48 Cal. Rptr. 225 (1965). As stated in the Teichert case, ". . . provisions for administrative settlement and extrajudicial arbitration are construed broadly . . . and . . . should be construed to prevent lawsuits, not encourage them." *Id.* at 751.

[56] *See, e.g.*, United States v. Moorman, 338 U.S. 457, 94 L.Ed. 256, 76 S.Ct. 288 (1950).

[57] 41 U.S.C.A. § 321 (1954).

[58] United States v. Carlo Bianchi & Co., Inc., 373 U.S. 709, 10 L.Ed.2d 652, 83 S.Ct. 1409 (1963).

[59] Macomber v. State of California, 250 Cal. App. 2d 391, 397 (1967).

Use of Demurrers and Motions for Summary Judgment

No effort is made in this paper to detail the techniques of preparing a demurrer or motion for summary judgment. Instead, a few observations are provided on the use of pretrial motions to avoid a trial on the merits.

There is often a danger that defense counsel handling a construction contract case may place undue reliance on the "obvious" contract language that may appear to defeat the claim as a matter of law. These provisions, known in the industry as "boiler plate," have been carefully developed over the years to protect the owner or agency from ingenuous claims and to warn bidders of the risks and conditions assumed. Such provisions typically include: notice of potential claim, limitations on the liability for delays or Acts of God, performance of extra work without written authorization, and the finality of an engineer's or an architect's determination.

In the usual litigation, these defenses should be asserted ideally in a demurrer[60] or motion for summary judgment. But in a contract situation, it is often difficult to obtain such a summary disposal of the action. This is because highway contract actions usually involve parties that have been bound by a long contractual relationship, sometimes spanning years, with daily and intimate contacts on a variety of issues. This setting is quite unlike the typical tort action in which two strangers traumatically and unintentionally collide at an intersection. Their contact is immediate and lasts only for the duration of the collision. In such a tort action, the judge is provided with the essence of this contact on a motion for summary relief, and thus can feel comfortable about granting such a motion without feeling that he has unfairly prevented the parties from revealing the entire story.

However, in a contract case, there are always many facts that arise out of the sheer length and intimacy of the parties' contractual relationship. Thus, the judge is reluctant to summarily dispose of the case when he has only a sketchy and incomplete picture of the scope of the contractual relationship without allowing the parties to develop their contentions further at trial. This hesitancy to grant summary relief is further exacerbated when a financially resourceful owner (usually a public agency) is the defendant. When a party of comparative modest means is pitted against such an adversary, the court is reluctant to deny such an individual his day in court.

Psychologically, and perhaps unconsciously, judges are often reluctant to summarily dismiss claims that arise from a contractual relationship, even when logic and the law favor such dismissal.

A tactical disadvantage of raising an unsuccessful motion for sum-

[60] A court will usually take judicial notice of the terms of a public contract. *See, e.g.*, A. Teichert & Sons, Inc. v. State of California, 238 Cal. App. 2d 736, 48 Cal. Rptr. 225 (1965).

mary relief is that the opponent is alerted at the law and motion stage as to what can be expected at trial. On the other hand, the assertion of a strong legal argument may convince the opposition to adopt a more conciliatory attitude toward settlement, which may be an objective of the defense.

These observations should not discourage the use of pretrial motions for dismissal in all instances. They should, however, prompt defense counsel to exercise caution in using such motions and to carefully consider all possible consequences and appraise realistically the chance of success in court on such motions.

PRESENTATION OF THE CASE

The presentation, argument, and examination techniques of a construction contract trial are not dissimilar to other types of trials. However, there are certain unique aspects to consider.

Opening Statements

In every case, an opening statement by counsel is essential to introduce the court or jury to the factual matters that will be presented during the course of the trial so that they can understand and appreciate the significance of the various witnesses who will testify. In a construction contract trial, the opening statements of counsel take on an added significance. Not only will the factual situation that will be presented to the judge or jury be outside their general knowledge, but also the vocabulary used to describe this factual situation will be foreign to them. It is essential, therefore, that an opening statement be presented at the commencement of the trial and not be deferred.

The opening statement should be phrased in simple terms with an explanation of the technical terms that may be encountered during the trial. This does not mean that an opening statement may not be extensive. As stated previously, an attorney will gain more in educating and conditioning the trier of fact to his case and theories than he will lose from exposing his hand in advance. Of course, argument must be avoided at this stage, but a strong statement of what he intends or expects to prove should be included, remembering that his opponent is entitled to comment on his failure to establish any such fact.

Consider also the possible use of significant photographs, movies, charts, or documentary evidence in the opening statement. This can be an effective technique for the defense which must, for the most part, await conclusion of the plaintiff's case to bring forth its exhibits, and by then the court and jury may have become irretrievably oriented to the plaintiff's biased charts.

For example, in one case the contractor prepared an elaborate and bulky three-dimensional model of the project site. The State, however, during its opening statement relied on its own aerial mosaic which had been enhanced with different colored tapes to depict various significant

physical areas and features. The mosaic was taped high on the wall (which, incidentally, avoided the common hazard of destruction from over-marking by the opponents during their presentation), visible to all, and soon became the basic reference exhibit for all, including plaintiff's counsel and witnesses. This made the expensive and space-consuming model prepared by plaintiff appear unnecessary and bothersome.

The use of exhibits in the opening statement is within the discretion of the court to educate the trier of fact as to the evidence expected and its significance to the action.[61] Of course, the exhibit must be marked for identification and it later must be introduced and received into evidence.

One further point that should be kept in mind at all times during the trial, notwithstanding the detailed explanation of the terms that are customarily used, is that very often, despite these explanations, the trier of fact will misinterpret or misunderstand these terms. Therefore, the attorney should not assume, during the trial, that when he uses a certain word or phrase that the trier of fact will understand it the same way that he does. Any word or phrase, the understanding of which is essential to the attorney's case, should be explained as many times during the trial as the patience of the judge will permit.

The Engineering Assistant

Important as the engineering assistant may be for preparation of the case, as emphasized in the section on technical assistance, his assistance at the time of trial is even more important. During the trial he should be in the courtroom as much as possible, and where permitted, should sit at the counsel table with his attorney. During the presentation of the case on behalf of his party, he should be ready to assist the attorney in keeping track of the physical evidence that will be introduced, such as diaries, letters, documents, photographs, and the like, to be certain that nothing is overlooked. During presentation of the opponent's case, the engineering assistant should keep notes containing a detailed analysis of the witness's testimony, and particularly note flaws in the testimony or omitted facts and details for use by the attorney in framing cross-examination questions. The engineering assistant is much better equipped to detect weaknesses in the statements made by witnesses or mistakes that witnesses may make as they relate to the occurrences on the project. If, during the trial, it appears that a chart or other information would better illustrate the testimony of a witness for his party or could be used to refute the testimony of another party, the engineering assistant can, during a recess, direct some of his personnel to obtain the information necessary to prepare such a chart or other such information.

An engineering assistant who takes an active interest in the trial can

[61] People v. Green, 47 Cal. 2d 209, 215, 302 P.2d 307 (1956).

be termed a paralegal member of the trial team. He can retrieve additional information or trial aids as necessary and relieve the attorney from much of this detailed and time-consuming activity. This will permit the attorney to keep up with the aspects of the case that are yet to come, such as the preparation of witnesses. Each evening, the attorney and the engineering witness should discuss the day's courtroom activity. The attorney will thus be able to better evaluate the effect that his witness is having on the trier of fact during the preparation of his part of the case, and will obtain the benefit of the engineering assistant's analysis of the evidence presented by the opposition. This will be of great benefit to the attorney in preparing for the cross-examination of opposition witnesses. The engineering assistant, being familiar with the details of the project, can often direct the attorney to a fact, a conversation, a document, or a photograph that will reinforce his contentions or refute the statement made by an opposition witness.

The engineering assistant provides another important service to the attorney and the case that is seldom overlooked when the situation arises, but is rarely mentioned; that is, the handling of settlement offers, whether initiated or received. When a case does not go well and the attorney believes an offer should be made or accepted, the engineering assistant, having worked closely with him on the case, can do much to aid the attorney in obtaining authorization to make, accept, or reject a offer. His unique service here is in providing an engineer's opinion regarding his first-hand knowledge of the case, which in many instances may carry more weight with his fellow engineers responsible for authorizing any offer or settlement than merely an attorney's view.

Cross-Examination

In a construction contract case, the techniques of cross-examination are in many respects the same as in any other case, and many excellent texts that discuss the art of cross-examination are available in most law libraries. One of the problems unique to cross-examination in a construction contract case has been discussed earlier, that is the problem of keeping track of the facts in such a complicated factual situation. A chart, which visually presents the various activities that occurred during the course of the project, has been mentioned previously as a useful tool in cross-examination. Its importance cannot be over-emphasized, particularly when representing the defendant public agency. Such a chart will permit the attorney to keep track of all aspects of the case during cross-examination. Whether by accident or design, one of the most frequent answers to a question asked of contractor personnel as to why they did not do a certain thing at a certain time was that they were occupied elsewhere on the project or had a problem at a location remote to that which is then under discussion. The use of a chart such as that described in the section on "Use of Visual Aids," *supra,* will permit the attorney to immediately examine the witness regarding the activities at the place he mentioned and thereby refute his contention, and the attorney may do this without searching through voluminous diary entries or other documents.

Presentation of Multiple Claims

Rarely will a construction contract case be limited to a single claim. The complexity of the construction process is such that disputes over prices, conditions, inspection, quantities, changes, interpretations, and the like are inevitable; and once a contractor decides to file suit on one claim, all disputes that have been preserved can be expected to be litigated.

Where the contract action consists of several claims, the plaintiff must decide the method of presentation for each claim. One method commonly used is to present the facts relating to each claim separately, beginning with the dominant claim and then proceeding to more minor claims. One difficulty with this method is that some aspects of the construction project will be repeated as the facts relating to the project are developed for each of the claims. This method helps the trier of fact deal with only one claim at a time. Also, the repeated reference to various aspects of the project may be an advantage because it will enable the trier of fact to better understand the project.

Another method available to the plaintiff–contractor is to present evidence in a chronological order, describing each of the claims as it arose during the course of the project. This method allows evidence relating to the project to be presented in an orderly and sequential manner from the commencement of the project to its completion. The trier of fact will be able to develop a better overview of the entire project through this method. Its disadvantage, however, is that the evidence presented may relate to more than one claim, and the trier of fact must organize for himself the evidence being presented on each claim. If the trier of fact is a judge and he takes notes, which most judges do, he has the constant problem of placing each fact, as it is developed, with the proper claim.

The defendant must anticipate, in order to prepare his defense, which of the two methods the plaintiff will use. The method selected will affect the organization of material used in cross-examination. The use of charts cannot be over-emphasized as a means of organizing the cross-examination. If the chart has been well conceived, it can provide an effective cross-examination tool that can be used regardless of the manner in which the evidence relating to the claims has been presented.

Regardless of the method chosen by the plaintiff to present facts relating to his claim, he should, in his opening statement and with his first witness, present a detailed overview of the entire project. He should describe in detail the various aspects of the project, using the construction terms that will be referred to throughout the trial. Emphasizing these construction terms is important because, in most

instances, the trier of fact will be unfamiliar with construction projects in general, and especially with the vocabulary that is used to describe the various construction features.

Presentation of Damages

At the outset, it should be observed that no matter how clear the public agency may feel its case is as to liability, it should not ignore preparing a defense as to damages nor minimize its importance.[62] Careful preparation is essential if the damage computations presented by the plaintiff are to be attacked or put into proper perspective. This should be recognized from the beginning of defense preparation.

If the trial is bifurcated and liability is tried first, some of the impact of the testimony showing large losses by the contractor can be minimized. If, however, liability and damages are tried together, the trier of fact may be influenced by testimony about large losses by the contractor in making determination as to liability. On the other hand, a bifurcated trial will allow the plaintiff to develop a more conscientious and complete case on damages should liability be found.

From the plaintiff's standpoint, the submission of evidence of damages can be relatively easy. This testimony may be no more than a recitation of the total costs expended compared with the contractor's opinion testimony about what it should have cost. In a more elaborate manner, such presentation can be in the form of a report or brochure, perhaps by a certified public accountant, setting forth the computation on each claim. The computations in such a report are usually very straightforward and simple.

It should also be noted that sometimes plaintiff's damages are so poorly presented, vague, and obviously unreliable that doubt is cast on what might otherwise appear to the court or jury as a meritorious claim. Testimony to pare down the unsubstantiated claim figure may only provide what was lacking in the plaintiff's case, though admittedly a lower figure. Often the plaintiff in such situations is looking for a "jury verdict" approach rather than a justifiable contract approach to damages. The dilemma here for the defense is whether to offer testimony on damages or attack plaintiff's failure to meet its burden of proof to establish damages within the terms of the contract. Unfortunately, case law as yet does not preclude the trier of fact from placing his own intuitive value on the claim. This is true even where the trier of fact is the judge.[63]

[62] See City of Salinas v. Souza & McCue Constr. Co., 66 Cal. 2d 217, 57 Cal. Rptr. 337, 424 P.2d 921 (1967), where the appellate court was required to accept as true all evidence tending to establish the correctness of the trial court's finding as to damages in view of the fact that the defendant did not challenge the evidence as to damages at the trial.

[63] Fatorre Co., Inc. v. Metropolitan Sewerage Comm'n, 505 F.2d 1 (7th Cir. 1974).

The latitude allowed plaintiffs in presenting damages presents the defendant public agency with a difficult task in refuting the validity and accuracy of such computations. The manner in which the defendant should place the damage aspects of the case in perspective depends on the type of damages sought and the manner in which evidence of damages is presented. There are, however, a few areas that deserve exploration in almost every case.

1. In most instances, the damage presentation will compare the cost of actually performing the work involved in the claim versus the cost that would have been incurred if the work had been performed without the claimed hindrance, interference, delay, misrepresentation, or other alleged conduct by the public agency that has resulted in the claim.

The effect of such a presentation is that all the inefficiencies, poor management, ineptness, and inexperience on the part of the contractor are included in costs actually incurred. In contrast, the presentation of the costs as they would have been assumes an ideal situation with none of the inefficiencies included. Moreover, if the contractor's bid price is used in this idealized comparison, it assumes that the item was correctly bid. This is not always true.[64]

2. The costs actually incurred by the contractor may be inflated for reasons not connected with the claim. For example, a separate entity renting equipment or selling materials or performing as a subcontractor may be owned by the contractor or have ownership in common. Often, for tax reasons, it may be more profitable for the contractor to show his profit in the equipment rental or subcontracting corporation and thus to write off a presently existing loss in such a corporation. Therefore, he may rent equipment from that corporation or perform other

[64] For example, in Great Lakes Dredge & Dock Co. v. United States, 96 F. Supp. 923, 925–926 (Ct. Cl. 1951), the Court stated:

> In order to show what its increased costs were the plaintiff has produced proof to show what its estimated costs were and what its actual costs were. The difference it has adjusted by certain errors that it admits it had made in making up its estimate, and also certain costs which it admits were not attributable to the encountering of this subterranean water. The balance it claims it is entitled to recover.
>
> *We do not think this is correct, in the absence of proof that its estimate of costs was correct. The evidence in the record, instead of showing that plaintiff's estimate was correct, convinces us that it was not, and that plaintiff had underestimated the cost of the work.* (Emphasis added.)

See also, F. H. McGraw & Co. v. United States, 130 F. Supp. 394, 400 (Ct. Cl. 1955) where the court states:

> This method of proving damage is by no means satisfactory, because, among other things, it assumes plaintiff's costs were reasonable and that plaintiff was not responsible for any increases in cost, and because it assumes plaintiff's bid was accurately computed, which is not always the case, by any means.

But see also, Moorhead Const. Co., Inc. v. City of Grand Forks, 508 F.2d 1008, 1015 (8th Cir. 1975).

work under subcontract for the project at a much higher than normal rate. The effect of this transaction is that, although the equipment rental or subcontracting corporation shows a profit, the construction project shows a loss, with the incidental effect being to raise the cost of performing the work on the claim.

In other instances, excess costs may be attributed to the project, and thus indirectly to the claim, because the wholly owned equipment rental corporation rents equipment to the project that is either not suited for the project or is in excess of the needs of the project. Again, this may be done simply because the equipment rental corporation happens to own that particular type of equipment. Such equipment, although not necessarily suited for the project or in excess of the needs of the project, is used because it is cheaper than obtaining the proper equipment from another company. On occasion, more equipment than is necessary for the project is charged to the project simply because it may be better to establish a loss on the project than to show the equipment as being idle.

3. Some of the problems faced in presenting a defense as to damages are shown in Figures 8 and 9.

Figure 8 is the index page from a brochure prepared to present the contractor's claim as to damages in a breach of warranty case.

Each of the items shown on the index page (Fig. 8) were supported by a schedule in which the damage items for each claim were detailed.

Schedule 3 of the brochure is shown in Figure 9. Four items have been marked on this schedule to illustrate some of the problems encountered in presenting the defense to the damage portion of the trial.

In this case, the State had made available, as an optional source of rock material for a highway project, a particular material site. The contractor chose to use this source, and his primary claim was that the

SCHEDULE 1
SUMMARY OF EXCESS COSTS

CONTRACT NO. 54-8VC27-F

Costs of operating S.P. pit (Schedule 2)		$389,133.38
Rental value of crushing plant used at Wilder pit (Schedule 3)		152,265.41
Excess costs of dozing away waste at Wilder pit (Schedule 4)		10,614.58
Excess labor cost of Wilder pit operation (Schedule 5)		74,635.41
Excess costs of maintenance and repairs at Wilder pit (Schedule 6)		72,263.81
Rental value of asphalt plant (Schedule 7)		19,966.81
Excess cost of Hauling plant mix (Schedule 8)		36,001.93
Liquidated damages - Note A		17,200.00
Excess water - 21,286.75M gallons at $2.50/M - Note B		53,216.88
	TOTAL	$825,298.21

Figure 8. Index from damages brochure.

SCHEDULE 3
RENTAL VALUE OF CRUSHING PLANT USED AT WILDER PIT

CONTRACT NO. 54-8VC27-F

(2) Actual hours of crusher operation			2,829
Hours of operation required if material had been as represented:			
(3) 494,742 tons ÷ 468 tons/hour = 1,057 hours			1,057
Excess hours of crusher operation			1,772
Cost of crushing and screening plant:			
(1) Cedar Rapids 32 in. x 40 in. crusher	$ 29,210.31		
Cedar Rapids 18 in. x 36 in. jaw crusher	16,249.33		
Cedar Rapids 40 in. x 24 in. roll crusher	25,817.96		
Cedar Rapids 42 in. x 14 in. apron feeder	10,933.61		
Fabrication costs on foregoing items, plus screens, tunnel, bunkers, conveyors and other appurtenances	121,573.56		(4)
	$203,784.77		
Customary monthly rental rate	(x) 7½		
	$ 15,283.86		
Add monthly rental value of generators	1,500.00		
	$ 16,783.86		
Number of months equipment was used	(x) 13½		
	$226,582.11		
$226,582.11 / 2,829 hours = Cost per operating hour			$ 80.09
Excess hours required			(x) 1,772 hrs
			$141,919.48
Add overhead @ 7.29 percent (Schedule 10)			10,345.93
		TOTAL	$152,265.41

Figure 9. Schedule 3 from damages brochure.

material was too sandy and that there was insufficient rock to produce the necessary rock products for the project.

Tests made by the State, of which the plaintiff–contractor was aware, and a visual inspection of the site showed that the site was indeed sandy and that considerable sand would have to be wasted in producing the rock materials from the site.

Other bidders who bid on the basis of using this material site testified that they anticipated using primarily a screening operation to process the material, with an auxiliary crusher to crush only the small amount of large rock they anticipated would be encountered in the site. The screening process would permit rapid processing of large quantities of material, and though the waste sand would be considerable, it would not slow production of the materials.

Despite the obvious sandy nature of the site, the contractor installed an elaborate rock-crushing plant with three rock crushers operating in tandem (see No. 1 on Fig. 9). Under the method employed by the contractor, all the material, including large quantities of sand that could have and should have been screened out before going to the crusher, were processed through the crushers. Crushers are quite restrictive in

size, and choking them with large quantities of sand slowed production.

The plaintiff–contractor testified that the primary reason he used the large crushing complex was because he owned it and thus it was available and if not used would have been idle.

The choice of the wrong type of equipment, of course, increased the time required to process the rock materials (see No. 2, Fig. 9).

In No. 3, Figure 9, the plaintiff–contractor computed the time that would have been required but for the alleged breach by the State. But here the assumed production rate of 468 tons per hour assumes no inefficiencies and presupposes that the large crushing complex was the proper type of equipment. Incidentally, the contractor's bid documents assumed a much lower rate of production for the rock materials. (See, for example, Fig. 1, where the anticipated rate of production of gravel blanket was 150 tons per hour. The average production for all rock products used for bidding purposes was 195 tons per hour.)

Once having established the difference between the actual production rate and the idealized anticipated production rate (here 1,772 hours—see No. 4, Fig. 9), this figure is used to compute damages in this schedule and in other schedules. Because this artificially large difference between actual and anticipated production becomes the basis for computing damages, it demonstrates the importance of challenging the validity of those figures.

Use of Trial Briefs

Trial briefs on the law and evidence are advisable for any contract case and are essential in a case tried without a jury. The brief will enable the court to study the attorney's contentions and will serve to educate and convince the court of the merits of the case.

Such a brief should concentrate on the factual contentions and should be supported by case authorities. In addition, it may be advantageous to have the exhibits that will be used during the trial premarked for identification and include extra copies of each in the trial brief. Thus, in the trial brief, the court may review the contentions of the party with the assistance of the exhibits which support the contentions. This will help him to follow the testimony as it is presented at trial, and in particular, the sequence of exhibits. If the charts or exhibits to be introduced are in color, the reduced copies presented to the court in the trial brief should also be in color. In most instances in which a reduced copy of a chart is in the trial brief, it is this chart that will be used by the court rather than the large chart introduced into evidence. An additional advantage of the reduced chart is that the court may make notations on the chart as evidence is presented.

The attorney should not be overly concerned that his trial brief will reveal his strategy. By the time of trial, the attorneys will usually be aware of all of the possible claims and defenses. Furthermore, the judge will need to be educated on the background facts and contract

fundamentals involved in the dispute. Thus, the party advancing this material in his brief will have gained an initial advantage. In addition, the preparation of a trial brief will force the attorney to set forth in writing a concise and logically consistent case. This process of articulating the case will enable the attorney to assess the merits of his position and highlight areas that need substantiation.

Generally the trial judge will be unfamiliar with such concepts as competitive bidding, unit price bidding, change provisions (particularly those clauses that allow unilateral changes without advance agreement on price), extra work payment provisions, time extension provisions, no-damage-for-delay or Acts-of-God clauses, and the like. These concepts are peculiar to construction contracts, and to the extent they are involved in the litigation, the court must be educated on these issues.

The benefits of an extensive brief are probably not as valuable if a jury is involved. With a jury, the education process must be limited to testimony, evidence, instructions, and oral argument. However, the advantage of a knowledgeable judge at the trial should not be overlooked. The trial judge sits as the thirteenth juror, with the prospect of a new trial serving as his veto power if he believes the jury decided incorrectly. Also, even though the parties anticipate a jury trial, often at the last moment a judge will successfully urge the parties to waive jury in the interests of court time.

Lastly, the brief may convince the court that, as a matter of law, the issues are decided by the terms of the contract, thereby avoiding issues of fact for the jury. For example, a claim for added compensation because of extra work could be decided by the contract terms, thereby avoiding the issue of "changed conditions" or "changes in the character of the work." Therefore, the value of a well prepared trial brief should not be overlooked, even where a jury has been demanded.

Use of Projector

As mentioned previously, construction cases rely heavily on documentary evidence and testimony relating to such evidence. It is usually difficult for a jury to grasp the significance of an examination without viewing the document along with the witness. The use of an overhead projector can combat this problem. Modern versions of such projectors are powerful enough to operate without the need to dim lights. Through its use, the jurors can have the words of the document before them during the examination of a witness. The attorney should not overlook the possibility of its use as a part of the final argument or even during the opening statement.

Of course, transparencies of the documents must be made from the original document. This may be done by regular copying machines with special transparency paper or with small portable units especially designed for this purpose. Projectors that are capable of projecting

reflected images from the original document eliminate the need for a transparency, but such projectors are usually unsuitable for the courtroom. Their image is too small, courtroom lights must be dimmed, and the cooling fans are too noisy.

Use of Notes

The special need for good note taking and record keeping during trial cannot be over-emphasized; the usual complexity and bulk of the records involved require careful note taking to ensure that all the intended records have been introduced and marked in evidence. Good housekeeping techniques must be adopted and religiously followed. A good method to follow is to keep on the counsel table a chart listing each record, with its internal file number, description, and exhibit number, with a notation to indicate whether it was received into evidence. Such a system should be used for both plaintiff's and defendant's records.

One advantage of premarking exhibits is that the attorney can list these exhibits in advance, in the order marked, with space for indicating receipt into evidence.

In taking notes, it is helpful to divide each page of a legal tablet down the middle with a vertical line. Notes are placed on the right side and special references are noted on the wide margin to the left. These references would include any comments or reminders, as well as exhibit references and special insights. Another good practice is to continually note ideas for argument and summarize significant testimony. Reliance on mental notations to recall all these matters for summation to the court or jury is risky. Important matters will certainly be overlooked by the time a long trial nears conclusion. It is also recommended that the attorney periodically summarize his notes.

These devices should aid the attorney immensely in organizing his exhibits, in ensuring that all his important points of testimony have been covered, and in condensing materials from which to conclude his case.

APPENDIX

LIST OF AFFIRMATIVE DEFENSES

Denial of liability on the merits.
Engineer's determination of claims final.
Waiver or release of claim rights:
- No notice of potential claim.
- Failure to give proper, detailed, and timely notice required by contract.
- Extra work not ordered in writing.
- Work performed was beyond the scope or requirements of the contract.
- Failure to protest written change order.
- Subject matter of claim covered by an executed change order.
- Claim compromised and released.
- An election to perform work knowing it was misrepresented by the contract.

- Negotiation of final pay warrant releasing any and all claims without reservation.
- Payment.
- Bid submitted without seeking clarification or interpretation of contract provisions.

Estimated quantities approximate only.
Failure to cooperate with other forces.
Assumption of the risk of unforeseen difficulties:
- Superior knowledge and expertise.
- Duty to examine plans, specifications, and work site and satisfy himself as to conditions.
- Voluntary selection of the method of performance.

Statute of limitations.
Statute of frauds.
Failure to mitigate damages.
Failure to comply with claims statute.
Failure to exhaust contractual remedies.
Unjust enrichment.
No damage:
- No damages for delay clause (time extension only).
- Subcontractor's damage without liability (Severin Doctrine).
- Collateral source rule (Souza case).
- Damages consequential in nature.
- Damages as a result of inefficiencies and matter of the contractor's control and responsibility.
- Failure to mitigate damages.
- Damage or delay caused by the contractor.

Acts of the engineer beyond scope of authority:
- Oral modifications of the contract.
- Oral promises or representations.
- Acts beyond delegated responsibilities.

Violations of law or contract:
- No contractor's license.
- Subcontracting in violation of the contract or law.
- Violation of prequalification statutes or regulations.

Claim sounds in tort:
- Failure to comply with public tort claims statutes.
- Sovereign immunity.

Failure to state a cause of action or claims.

APPLICATIONS

The foregoing research should prove helpful to highway and transportation administrators, their legal counsel, and those responsible for administration of highway construction contracts. Officials are urged to review their practices and procedures to determine how this research can effectively be incorporated in a meaningful way. Attorneys should find this paper especially useful in their work as an easy and concise reference document in contract litigation.