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“THE "CARDINAL CHANGE" DOCTRINE AS A DEFENSES
TO SURETY BOND CLAIMS:
A PRACTICAL GUIDE TO THE FEDERAL CASE LAW”

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Sureties occasionally face a situation where the job at the time of a claim bears little or no resemblance to the job the surety originally bonded. In these cases, the doctrine of "cardinal change" may provide a defense for the surety against the obligee. The court decisions make one thing clear—nothing is clear about cardinal change. The courts decide the issue on a case-by-case basis, defining the doctrine in broad and vague terms, and constantly saying that no one factor is determinative. This makes the doctrine excellent for scholarly fodder, but offers little practical guidance.

Thus, this paper will attempt a more pragmatic approach. By examining the individual cases both rejecting and accepting claims of cardinal changes, it is possible to develop some practical and relatively specific guidelines for determining when to raise the issue.

WHAT IS A "CARDINAL CHANGE?"

The cardinal change doctrine developed in the federal courts as a means for government contractors to avoid contractual limitations on damages in situations where changes grossly exceeded the scope of the original contract. The best overall summary of the doctrine is in Atlantic Dry Dock Corp. v. U.S., 773 F.Supp. 335 (M.D.Fla. 1991), where the court explained the doctrine as follows:

The cardinal change doctrine is a creature of the body of law which has arisen in the context of disputes over government contracts.

[A cardinal change] occurs when the government effects an alteration in the work so drastic that it effectively requires the contractor to perform duties materially different from those originally bargained for. By definition, then, a cardinal change is so profound that it is not redressable under the contract, and thus renders the government in breach.

Allied Materials & Equip. co. v. United States, 569 F.2d 562, 563-64, 215 Ct.Cl. 406 (1978). The purpose of the cardinal change doctrine "is to provide a breach remedy for contractors who are directed by the Government to perform work which is not within the general scope of the contract," in other words, work which "fundamentally

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1 The cardinal change doctrine evolved primarily through federal cases. These cases, therefore, provide the most comprehensive body of law on the subject. A survey of state law regarding cardinal change is more appropriate to a book than to a paper. For papers which provide some discussion of cardinal change under state law, see Egan, "Discharge of the Performance Bond Surety," Law of Suretyship, (1993 ABA Tort and Insurance Practice Section), and Papan, "Change Orders, Failure to Complete and the Surety's Obligations," (1996 ABA Tort and Insurance Practice Section, Annual Joint Midwinter Meeting).

[T]here is no automatic or easy formula which can be used to determine whether a change (or changes) is beyond the scope of the contract and, therefore, in breach of it. "Each case must be analyzed on its own facts and in light of its own circumstances, giving just consideration to the magnitude and quality of the changes ordered and their cumulative effect upon the project as a whole."

Id. (quoting Wunderlich Contracting Co. v. United States, 351 F.2d 956, 966, 173 Ct.Cl. 180 (1965). "In making this determination, the court is to look at all relevant circumstances, including, but certainly not limited to, the increase in cost of completing the contract and the number of changes made." In Re Boston Shipyard Corp, 886 F.2d 451, 456-57 (1st Cir.1989) (citing Air-A-Plane Corp. v. United States, 408 F.2d 1030, 1033, 187 Ct.Cl. 269 (1969)).

The basic standard . . . is whether the modified job "was essentially the same work as the parties bargained for when the contract was awarded. Plaintiff has no right to complain if the project it ultimately constructed was essentially the same as the one it contracted to construct." Conversely, there is a cardinal change if the ordered deviations "altered the nature of the thing to be constructed.


This vague language reappears in all cardinal change cases. Thus, any practical approach to determining the availability of a cardinal change defense to a bond claim must begin with a fact-intensive analysis of the cases.

WHAT FACTORS DO AND DON'T CONSTITUTE CARDINAL CHANGES?

I. CASES FINDING CARDINAL CHANGES

General Contracting and Construction Co. v. U.S., 84 Ct.Cl. 570 (1937). This is the first "cardinal change" case. The change was the deletion of one building from a hospital complex. The deletion represented 10% of the cost of the overall work. The court found that deleting an entire building was a fundamental change in the character of the project which the contractor had contracted to build. The court found a cardinal change not because of the magnitude of the change, but because of the quality of the change.

P. L. Saddler v. U.S., 287 F.2d 411 (Ct.Cl. 1961). The contract was for the construction of a levy. The government modified the contract so that the length of the levy increased by 100% (from 1,000 to 2,000 feet) and the volume of the levy increased by 141% (from 5,500 cubic yards to 13,264 cubic yards). Converse to General Contracting, the Saddler court found a cardinal change not because of the quality of the change but because of the magnitude.
Luria Brothers and Company, Inc. v. U.S., 369 F.2d 701 (Ct.Cl. 1966). The contract was for the construction of an airplane hangar. During the course of construction, the government completely changed the design of the foundation, which was the major structural component of the building. The contractor had to tear out previously completed work. When the contractor began excavating the foundation pursuant to the redesigned plans, the government abandoned those plans and required the contractor to excavate the foundation on a "trial and error" basis. The contractor had to dig the foundation foot by foot, stopping each foot so the government could test the stability of the soil, until the government was satisfied. The contractor ultimately had to excavate the foundation to elevations well below those on the amended plans.

The original 330 day contract was extended an additional 518 days, a 160% overrun. Luria Brothers' claimed cost overrun, however, was only 14% ($248,665.76 on a $1,700,166.50 contract).

The court found a cardinal change not because of the magnitude of the overruns in time and money, but because in the change of the quality of the project. The court viewed the foundation as a major structural component of the project. Requiring Luria Brothers to tear out its extensive completed work, materially amending the plans, abandoning the plans altogether in favor of an enormously labor and time-intensive "trial and error" method, and ultimately requiring excavation to depths much deeper than those contracted for, all combined to create a change of such magnitude that it breached the contract. The Luria court found a cardinal change because of the qualitative changes in the contractor's work, not because of the magnitude of time or cost overruns.

Westinghouse Electric Corp. v. Garrett Corp., 437 F.Supp. 1301 (D.Md. 1977). In this case, a subcontractor used the cardinal change doctrine to establish a breach by the prime contractor. The subcontractor was to construct complex military equipment on a tight schedule using special technical drawings called "source control drawings." These drawings contained all material information in a single source to which all parties could refer. Westinghouse did not timely provide the source control drawings, but argued that Garrett could have obtained all of the necessary information from a variety of other separate, fragmented sources.

The court found that the failure to supply the drawings was a material change which rose to the level of a breach. Constructing the products without the unified set of drawings constituted a major impediment to Garrett's construction procedures, especially in light of the tight delivery schedule. The Garrett court based its finding of breach on the adverse qualitative impact on Garrett's construction methods, not on the quantitative nature of the changes.

Peter Keiwit Sons' Co. v. Summit Construction Co., 422 F.2d 242 (8th Cir. 1969). Keiwit hired Summit to perform excavation, site preparation and backfilling operations on a missile site for the sum of $2,601,315.00. Approximately $600,000.00 of this sum was for backfilling operations. Keiwit then altered the procedures for backfilling, causing Summit to stop and re-start multiple times instead of the contemplated one-stop operation. This change increased the cost of the backfilling phase to $2,000,000.00, a 333% increase. This in turn increased the overall cost of the subcontract by over 50%. The Court, citing to Saddler, supra., held that the financial magnitude of these changes, standing alone, constituted a breach of the contract.

Airprep Technology, Inc. v. U.S., 30 Fed.Cl. 488 (1994). The contractor was to build a special air filtering system known as a "baghouse" for approximately $135,000. Based on the design
drawings, Airprep constructed the baghouse to withstand pressures of .02 to .90 psi. The government then insisted that the baghouse be constructed to withstand pressures in excess of 1.6 psi. This change required more expensive and complex materials, as well as a change in construction methods from on-site to off-site fabrication. The cost increase was approximately $104,000, or 77%. The court found that these increases constituted cardinal changes which justified Airprep in terminating the contract for breach.

II. CASES RECOGNIZING A FACTUAL BASIS FOR CARDINAL CHANGES BUT NOT ADJUDICATING THE ISSUE FOR PROCEDURAL REASONS.

Tufano Contracting Corp. v. U.S., 356 F.2d 535 (Ct.Cl. 1966). Plaintiff contracted for the construction of military housing. The government required the installation of "blocking," which is lumber connecting structural members such as trusses for the purpose of providing additional points for securing wallboard or roof sheathing. The plaintiff alleged that the specifications did not require blocking and the court agreed. The court then held that plaintiff might recover damages for breach of contract, as opposed to equitable adjustments to the contract, if it proved at trial a sufficient impact on the "time and money" needed to complete the work.

Air-A-Plane Corp. v. U.S., 408 F.2d 1030 (Ct.Cl. 1969). This is one of the most-cited cardinal change cases. The contractor was to manufacture smoke generators. After the contract was signed, there were numerous changes to the drawings and specifications. At least 125, and possibly up to 1,000 changes were made. The Board of Contract Appeals had found that the changes were so numerous that the manufacturing contract took on the aspects of a design or development contract. The Board even noted that another type of contract, such as a cost plus contract, may ultimately have been more appropriate.

The appeals court held that the contractor had made a case for raising cardinal changes. The court remanded the case for trial on the cardinal change issue. The court proposed a non-exhaustive checklist of both qualitative and quantitative factors to consider, as follows:

Qualitative Factors:
- the number of changed parts vs. the number of unchanged parts;
- the effect of the changes on the unchanged parts;
- the character of the changes;
- the timing of the changes;
- the extent of engineering, research, and development which the changes required the plaintiff to do;

Quantitative Factors:
- the number of changes; and
- the cost of the changed item as compared to the cost of the original.
The court also noted that the Board of Contract Appeals' finding that, because of the extensive changes, a different type of contract was better suited to the project could provide a factual basis for finding that a cardinal change had occurred.

Edward R. Marden Corp. v. U.S., 442 F.2d 364 (Ct.Cl. 1971). Marden contracted to construct a hangar for $2,000,000.00. Midway through, the hangar collapsed and had to be completely rebuilt. Before the contract Board of Appeals, Marden asserted that the collapse was due to the government's failure to inform it of the proper specifications. Marden lost, with the Board finding Marden at fault for the collapse. Marden then filed suit in claims court seeking an equitable adjustment due to changes in the contract, and damages for breach of contract based on the alleged misrepresentation of the specifications.

Although Marden had not done so, the court, gratuitously, characterized Marden's allegations as asserting cardinal change. The court stated that where "drastic consequences follow from defective specifications," a change is a cardinal change, citing Luria Brothers, supra. Marden alleged that it had to completely reconstruct the hangar, at a cost increase of $3,700,000.00, an 85% price increase. Thus, the work doubled and the cost almost doubled. When holding that these allegations stated a claim for cardinal change, the court noted that, qualitatively, the project had remained the same—a hangar. The court based its decision "on the sheer magnitude of reconstruction work caused by the alleged defective specifications." Id. at 370.

Allied Materials and Equipment Co., Inc. v. U.S., 569 F.2d 562 (Ct.Cl. 1978). The contractor was to supply cylinder assemblies to the Army. The government was obligated to supply the contractor with special tools for fabricating the equipment, but sold the tools to a competitor. The contractor stopped work, claiming that the sale of the tools completely prevented it from performing, and sued for damages for breach. The court held these allegations sufficient to raise a possible cardinal change. The court found a possible cardinal change based solely on the qualitative burden placed on the contractor's construction methods.

General Dynamics Corp. v. U.S., 585 F.2d 457 (Ct.Cl. 1978). General Dynamics contracted to produce nuclear submarines. One contract, for three subs, was for approximately $60,000,000.00 and an estimated 5 years' duration. During the course of construction, several submarine disasters caused the Navy to drastically change the specifications for the submarines. Production was delayed for over two years (an approximate 50% increase), and there was an approximate 20% increase in price. The final version of the submarines was significantly different from the originally specified submarines in many different respects. The court held that, under the criteria of Air-A-Plane, supra., "the question of a cardinal change . . . might be close and triable." Id. at 462. The court, however, found that the government had a special privilege to make changes in response to military exigencies which could threaten national security.

Atlantic Dry Dock Corp. v. U.S., 773 F.Supp. 335 (M.D. Fla. 1991). The contractor was to refurbish two Coast Guard vessels. Because of delays and numerous modifications to the contract, the time for completion took 200% of the originally scheduled time. The cost of the contract increased by 80%. The contractor sued for delay damages and for breach of contract based on the cardinal change doctrine. The government obtained summary judgment on the delay damage count based on waivers of delay damages contained in each separate modification to the contract.

The court denied the government's motion on cardinal change. The court recognized that cardinal change dealt with cumulative, not individual, changes to the contract and therefore was not
governed by the individual waiver of delay damages in each separate change order. The court found that the facts of record created an issue of fact as to whether a cardinal change occurred.

Thermocor v. U.S., 35 Fed.Cl. 480 (1996). The contractor was to treat 20,000 cubic yards of contaminated soil for PCB removal, and transport 1,000 tons of soil, for a price of $15.5 million. Ultimately, the contractor had to treat 41,000 cubic yards and transport 1,600 tons, a 100% and 60% increase respectively. The government offered an equitable adjustment of approximately $8.5 million, a 55% increase. On these facts, the court ruled that Thermocor had properly created an issue of cardinal change for the court to consider.

III. CASES REFUSING TO FIND CARDINAL CHANGE.

Walters v. U.S., 130 F.Supp 360 (Ct.Cl. 1955). A lawyer contracted to prepare title certificates for the Army Corps of Engineers. The contract estimated 3,000 certificates for an estimated $250,000.00 acres of land. Ultimately, the Corps only required 1,651 titles involving 200,000 acres, a decrease of 50% in the amount of work. The lawyer sued for damages, claiming the reduction was a cardinal change which breached the contract. The court examined the contract, and noted that the contract stated that the quantity of work was an estimate. The contract explicitly provided for adjustments in accordance with more or less work, and even provided the lawyer with a minimum guarantee.

Because the contract contemplated and addressed the exact facts of the case, those facts did not establish a cardinal change, which, by definition, is a change not contemplated by the contract.

F.H. McGraw and Co. v. U.S., 130 F.Supp. 394 (Ct.Cl. 1955). McGraw contracted for the construction of additions to a veterans hospital. The original contract was for 400 days duration and a cost of $3 million. During the construction, the Veterans Administration made extensive revisions to the layout of the new floors and buildings, but did not alter the basic structure of the project. These changes resulted in stop work orders extending the job duration by 660 additional days, or 65%. McGraw sued for damages arising from the delays.

The court held that the increase in duration, itself, was not a cardinal change. The changes to the floor layouts were within the contemplated scope of the changes clause in the contract.

Magoba Constr. Co. v. U.S., 99 Ct.Cl. 662 (1961). Magoba contracted to remodel and expand the U.S. courthouse in Brooklyn, New York, for a price of $2,050,000.00 and a time period of 720 days. During the course of the project, the government ordered 62 changes. These changes added $80,000.00 to the contract price (3% increase) and 96 additional days to the schedule (13% increase). These changes were not of sufficient magnitude to constitute cardinal changes, notwithstanding the number of change orders issued.

Laburnum Construction Corp. v. U.S., 325 F.2d 451 (Ct.Cl. 1963). The contractor was to build a steam line across a naval base. Defective specifications caused numerous work stoppages, and many changes had to be made in the location of the line. The work was delayed by an additional 80% (from 300 days to 544 days). The court concluded that the line remained in the same general location and along the same general route as required by the contract. The length of the line did not change substantially, nor did the amount of pipe or terminals. Thus, nothing "fundamentally altered the nature of the bargain." Id. at 459. The long delay, standing alone, was not sufficient.
Aragona Const. Co. v. U.S., 165 Ct.Cl. 382 (1964). Aragona contracted to build a V.A. hospital. The V.A. requested numerous change orders, but these changes primarily substituted materials. They did not alter the size, number of floors, or facilities of the project overall. For the entire project, there were 65 change orders and 37 "minor modifications." The court held that these changes were not cardinal changes. Aragona contracted to build a reinforced concrete hospital, and that was "exactly what it built."

J.D. Hedin Construction Co. v. U.S., 347 F.2d 235 (Ct.Cl. 1965). Hedin contracted to build a Veterans Administration hospital complex, consisting of a 500 bed hospital and numerous associated buildings. The time for completion was 540 days. The time for actual completion was 1,408 days, an overrun of 175%. Towards the end of the contract, the V.A. issued 33 miscellaneous change orders. Hedin sued for breach, alleging that the change orders combined with the long delay constituted a cardinal change. The court held that the number and the nature of the changes were not unusual for the size of the project. The court went on to state that delays in time due to otherwise proper change orders do not constitute cardinal changes. Id. at 258.

Wunderlich Contracting Co. v. U.S., 351 F.2d 956 (Ct.Cl. 1965). The case involved another V.A. hospital contract. During the project, the V.A. issued numerous change orders covering wall locations, ceiling heights, furring, color changes, door modifications and structural and dimensional changes. The project experienced a 58% time overrun (540 to 858 days), and between a 6% and 20% cost overrun. The court found that the changes did not alter the fundamental nature of the project, construction of a hospital building, and that the changes were well within the contemplation of the contract. Id. at 966. Nor did the magnitude of the overruns constitute a cardinal change. "Manifestly, plaintiffs' performance has been lengthier and costlier than anticipated, but in the long run they constructed essentially the same project as that described in the contract."

McDaniel v. Ashton-Mardian Co., 357 F.2d 511 (9th Cir. 1966). A plumbing subcontractor sued the prime contractor for damages arising from delays to a project to build an Air Force station. The government issued 39 change orders, which caused the project to go 43% over schedule (450 days to 646 days). The court held that the extra plumbing work was within the contemplation of the contract, and that the extended time did not constitute a cardinal change.

Keco Industries, Inc. v. U.S., 364 F.2d 838 (Ct.Cl. 1966). Plaintiff received a contract to construct 270 refrigeration units for the Army. Of the total, 100 were to be gasoline powered units and 170 were to be less expensive electric powered units. Prior to the time that plaintiff began producing the gasoline powered units, the Army issued a change order changing the gasoline units to electric powered units. Keco then sued for damages, alleging that this was a cardinal change. The court noted that all specifications except the power units remained the same. Plaintiff faced no new or unknown items, nor any increased expenses. To the contrary, the change reduced the expense of construction. Because the "essential nature" of the contract did not change, there was no basis for finding a cardinal change.

S.J. Groves & Sons Co. v. U.S., 661 F.2d 170 (Ct.Cl. 1981). Groves contracted to build a water pipeline for the Department of Interior at a price of $2.2 million. Upon pressure testing, the pipeline failed along its entire length. The government imposed two alternatives, destroy the old pipeline and build a new one to the original specifications, or install a steel liner pipe in the existing pipeline. Groves elected the latter, and completed the work at an additional cost of $6 million, a 175% increase. Groves sued for breach of contract, alleging that the pipeline failed due to faulty
specifications and that the government had imposed a cardinal change due to the radically increased cost of the pipeline.

The court failed to recognize a cardinal change. The court noted that Groves elected to pursue the most expensive alternative, and therefore could not prove that the government's act, instead of his own choice, caused the alteration in price.

This decision seems directly at odds with Saddler, Keiwit and Airprep, supra. These cases found that changes of far less magnitude than those in Groves constituted cardinal changes if proven true. Under these authorities, the Groves court should have allowed the cardinal change allegations to go to trial. The "causation" analysis makes little sense. The government offered Groves only two choices, rebuild the pipeline or modify it with the steel. The first choice would have at least doubled the original price; the second choice tripled that price. Either would be a cardinal change under other cases, and either is an imposition by the government, not a "choice" by the contractor.

**Cray Research, Inc. v. Department of the Navy, 556 F.Supp. 201 (D.D.C. 1982).** The Navy solicited bids for a sophisticated weather prediction hardware/software system which met Navy specifications. The low bidder, Control Data Corp., provided its state-of-the-art unit, which could not perform to specifications. The Navy required Control Data to ultimately substitute a newer, radically more advanced machine. Cray, the second low bidder, sued to enjoin the substitution, alleging that it constituted a cardinal change which, by law, required the contract to be re-bid. The court held that the substitution was not a cardinal change. The Navy did not specify what model machine had to be supplied, only the performance criteria the machine had to meet. Control Data's substitution, far from being a cardinal change, was the only way to meet the Navy's specifications.

**In re. Boston Shipyard Corp., 886 F.2d 451 (1st Cir. 1989).** Boston shipyard contracted to refurbish a military vessel. The contract called for a 100 day performance period and a price of approximately $5 million. The contract was an "open and inspect" contract under which the full scope of the work would not be known until the ship was in drydock and opened up. As the work progressed, Boston Shipyard would notify the military of any problems found, which in turn would generate change orders. The project was substantially delayed, and generated an extra $1.5 million in change order work, a 30% increase.

The court found that this overrun did not constitute a cardinal change. Moreover, the "open and inspect" contract, by its very terms, anticipated discovery of unknown conditions and change orders resulting therefrom. Thus, the amount and type of change orders requested were not a fundamental alteration of the project.

**Brandt Construction Co., Inc. v. Metropolitan Water Reclamation District of Greater Chicago, 967 F.2d 244 (7th Cir. 1992).** A contractor was hired to build a portion of a reservoir. The specifications estimated that 578,186 cubic yards would require cheap scraper excavation, and 81,006 cubic yards would require much more costly dragline excavation. The contractor bid a unit price of $1.90 per cubic yard for the excavation work as a whole. This unit price combined the estimated expenses for scraper and more expensive dragline excavation. Ultimately, the contractor had to excavate an additional 67,804 cubic yards, all requiring the more expensive dragline excavation. Although the dragline work almost quadrupled, the overall excavation work increased only 7%.
The court found that this increase did not constitute a material alteration of the contract. Additionally, the contract specifically addressed changes in unit quantities, and set forth a procedure for compensating same. This being the case, the alteration clearly was not outside the contemplation of the parties.

AT & T Communications, Inc. v. Wiltel, Inc., 1 F.3d 1201 (D.C.Cir. 1993). AT & T contracted to provide the U.S. government with comprehensive telecommunications services, one part of which was data transmission. The estimated value of the contract was $5 to $8 billion. After the contract was executed, AT & T offered and the government accepted an upgrade in data transmission involving new technology and increasing that portion of the contract by $100 million. The second low bidder protested, arguing that the modification to data transmission was so material as to constitute a new contract, requiring new bids.

The court disagreed. The court noted that the proper comparison was the original contract as a whole compared to the contract as a whole as modified. In this context, the modification was minimal. Additionally, the contract specifically provided for upgrades as new technology came on line. Thus, the modification was not outside the contemplated scope of the original contract.

IV. GENERALIZATIONS ABOUT CARDINAL CHANGE

The cases above, for all their factual uniqueness, do permit some generalization regarding cardinal changes. Certain quantitative and qualitative factors consistently do and do not amount to cardinal changes.

Quantitative Factors. There are three quantitative factors: (1) changes in size or amount; (2) changes in cost; and (3) changes in time. These factors are not equally significant. Changes in time are far less important than changes in size or cost. A sufficient change in size or cost, alone, may be sufficient. A change in time, however, is not sufficient by itself. The change in size or cost must be substantial. Most cases do not recognize cardinal change unless the size or cost overrun approaches 100%.

There is also an interrelationship between the factors. If both size and cost increase substantially, but neither one to the 100% level, the combined effect of the increases still may constitute a cardinal change. In such a case, a significant increase in time may also tip the balance. If the cost and the size overruns do not exceed 50%, however, the odds of prevailing on a cardinal change defense are almost nil. Finally, changes which reduce the amount of work or the expense of the contract generally do not constitute cardinal changes.

Qualitative Factors. By definition, these are more amorphous. Significantly, courts find "qualitative" cardinal changes even though the impact on job size or cost is moderate, or even minimal. Several factors, however, are discernable. The first is changes in fundamental structural design. This includes the deletion of buildings, significant changes to square footage, and changes in structural stress requirements. The second is work outside the scope of the contract. This includes research or design efforts not included in a basic manufacturing or construction contract. The third is fundamental changes in construction methods. This includes abandoning specifications and requiring a "trial and error" approach, or changes requiring abandonment of on-site construction to fabricate at distant or expensive locations.

Where qualitative changes such as these exist, courts find cardinal changes even when the project changes relatively little in size or in price.
SURETIES AND CARDINAL CHANGE

Although this paper is primarily concerned with developing consistent and practical criteria for evaluating whether a cardinal change has occurred, there is an ambiguity as to how cardinal change affects a surety.

The cardinal change doctrine is closely akin to the general doctrine that material changes in the underlying bonded contract discharge the surety. See, U.S. v. Reliance Ins. Co., 799 F.2d 1382 (9th Cir. 1986). The general trend of this rule is that the discharge only occurs where there is prejudice to the surety, with most cases placing the burden of proving no prejudice on the obligee. See, Mergentime Corp. v. Washington Metropolitan Area Transit Authority, 775 F.Supp. 14 (D.D.C. 1991) and cases cited therein. No federal cardinal change case has discussed the doctrine's relationship to suretyship. This is perhaps not surprising since the cases all involve aggressive contractors suing the government for damages.

Yet, it seems that the "material alteration" doctrine is not co-extensive with the cardinal change doctrine. Although "material alteration" cases use similar language, such as converting the original contract into "a significantly different one," U.S. v. Reliance Ins. Co., supra., at 1386, their factual patterns indicate that they may find material changes at levels which would not satisfy the demands of the cardinal change cases. Indeed, many "material modification" cases involve consensual changes between the principal and the obligee, thus automatically negating the fundamental element of cardinal change.

A cardinal change, by contrast, is an adversarial act of the obligee which breaches the contract. It entitles the principal to extra-contractual damages, Saddler, supra., and even entitles the principal to cease performance, Garrett and Allied, supra. A change that qualifies as cardinal, therefore, should also discharge the surety regardless of "prejudice." Federal case law has not yet clarified this distinction.

CONCLUSION

The cardinal change doctrine is rarely available, but may provide a powerful defense to a bond claim. Having a practical understanding of what the case law deems cardinal changes is essential in negotiating cardinal change issues with an obligee.