



## **Avoiding Contract Disputes and Litigation - Ship Repair Contracts**

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own water and has systems for handling requirements related to heating, cooling, lighting, hot water, food preparation, garbage and sewage handling. The ship, which incorporates a wide range of technologies necessary to the provision of all these services, while remaining in compliance with safety, environmental and other regulatory constraints, then finds itself in need of shipyard services for a wide variety of reasons. Ships may seek shipyard services for everything from a relatively simple annual "check-up" to a major conversion or renovation. Often, many of the technologies incorporated within the vessel require maintenance, repair, or even reconfiguration.

It would be impossible to devise one standard contract which addresses such a vast spectrum of contractual possibilities. Therefore, the contract and supporting documents, such as specifications and plans, are generally formatted in response to the specific tasks at hand. As many of us have observed, the preparation of some contract documentation is better than others.

Actually, a contract is nearly superfluous in those instances when everything goes according to plan - the ship is delivered on time to her highly pleased owners, with all work satisfactorily accomplished and all regulatory approvals obtained - After delivering the ship to her owners, the shipyard's repair manager praises his staff for another fine job completed on schedule and within budget. Such a scenario however, is not always the case.

In all contracts, there exists a potential for contract disputes to arise due to the necessarily different perspectives of the owner and the shipyard. Ship repairers are business entities with an obligation to strive for some degree of profitability. The ship owner is either a governmental agency with a severely limited budget or a commercial organization which also seeks to maximize profitability by minimizing expenses and down time.

In interpreting any given contract requirement, the maximum profitability for the shipyard results from the implementation of the least-cost solution which: contractually satisfies the specific requirement, can be accomplished within the project schedule and will survive the post-contract warranty period. Conversely, the owners' interpretation must be driven by a need to implement the best-possible solution for his repair dollar.

Disputes therefore, are going to arise. Too often, the contract management representatives for the owner and the shipyard arrive at diametrically opposed viewpoints concerning the issue in dispute and then pass the matter along to higher authorities for ultimate resolution. A possible result of the resolution process however, is that the prevailing party will discover that it has spent far more to win the resolution than the original issue was ever worth. The goals of both parties are more likely to be achieved if the contract managers understand the procedures, risks and costs associated with dispute resolution by mediation, arbitration or litigation. This permits the on-scene repre-

sentative, who is generally closest to the facts of a disputed issue, to consider some risk/cost/benefit calculations before finalizing his position concerning the disputed issue. A comparatively minor concession at this point may result in significant long-term savings.

To put this principal in its proper perspective, let us consider an example in which there is a contractual requirement to provide several new piping manifolds in a machinery space. The shipyard estimator has planned for the routine fabrication of these manifolds, using standard pipe stock and valves assembled by his pipefitting personnel. When the production staff begins to fabricate and install these assemblies however, it is discovered that the installation of a new, contractually required switchboard in the same area leaves insufficient clearance for the planned new manifolds, and that the only solution is to procure custom-fabricated manifolds of a low-profile modular design from an outside manufacturer. For sake of argument, let us assume that this procurement represents an additional \$50,000 in costs to the shipyard, in material, project delay and disruption.

In this instance, the shipyard representative claims that there was a deficiency in the contract specifications, while the owners' representative claims that the contract required the installation of the manifolds and that the shipyard should have realized that custom fixtures were necessary due to the new switchboard location. The resolution of this issue in arbitration requires the preparation of the attorneys presenting the case, as well as

supporting expert witnesses. This in turn requires a considerable number of non-production hours to be expended by the contract managers, their support staff and planning/production/inspection personnel. If the contract contains an arbitration clause, the procedure commences with the selection of one or more arbitrators by the attorneys which in turn causes both parties to begin incurring costs of both compensating the arbitrator(s) and the arbitration association's administrative fees. The arbitrator(s) will prepare for hearings by reviewing the written submittals which have to be prepared by both parties and then actual hearings commence. Both parties must transport attorneys, experts and witnesses to the agreed-upon arbitration site, then feed and house them during the hearings. Each side is given the time needed to present and support its case, with each witness being cross-examined by counsel for the opposing party. Opening and closing statements by the attorneys and deliberations by the arbitrator(s) can easily cause this hearing process to span two weeks.

If the contract dispute is to be resolved by litigation instead of arbitration, associated costs will become even greater since an additional several months will transpire prior to the commencement of the trial. This period may even become years instead of months.

If this were the only issue in dispute between our parties, it is apparent that each side would minimally require several weeks of work by an assembly of high-priced talent. In this case, the costs to

each party to see the issue through to a decision in arbitration would probably be on the order of \$150,000 to \$200,000. Even if a decision was reached in complete favor of one party over the other regarding the actual issue, there may be no award for recovery of costs associated with the preparation and presentation of its case. More often than not, this is the case in arbitration proceedings. So for our example, the best result is that the successful party only spent \$150,000 to recover \$50,000, for a net loss of \$100,000. The worst result is that the unsuccessful party spent \$200,000 only to lose another \$50,000, for a net loss of \$250,000. Not to be overlooked is the fact that the shipyard probably had no choice but to install the custom manifolds in order to finish the project and has had to finance the additional amount which is in dispute. Clearly, some negotiation and agreement between the parties at the onset of the conflict would have been beneficial to both.

The above example is obviously of an extreme nature. Arbitration is seldom initiated over a single issue valued at \$50,000. The point however, is that the contract administrator should perform the calculation of what the costs of "outside" resolution of any given dispute can escalate to, before deciding to take a "hard-line" position on the issue. Additionally, the example is not meant to imply that all arbitration is not cost-effective. There are innumerable cases in which, for whatever reason, the volume and complexities of issues in dispute make resolution at the contract manager level impossible. If our

previous example had been based upon an irreconcilable difference of \$5,000,000, then the arbitration process would represent a reasonably simple and cost-effective means of adjudicating the issue.

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### **3. Common Sources of Contract Disputes .....**

Many contract disputes in ship repair work originate within the various elements of the contract document package. This package is typically prepared by the owner, to describe the work he seeks to have performed upon the vessel. The contents of the package may vary depending on the type and magnitude of work to be performed, but virtually any job beyond periodic maintenance work will include a pro-forma contract, contract specifications, contract drawings of new or modified systems and perhaps some or all of the existing "as-built" drawings of the vessel. Interested shipyards then prepare their bid to perform this work, based on the information presented by the contract document package.

Disputes which later arise with regard to the contract documents generally fall into one of the following categories:

- 1) Different elements of the document package present conflicting requirements with respect to a particular item of work.
- 2) The contract documents fail to accurately describe the full scope of work envisioned by the owner with respect to a particular item.
- 3) The contract documents fail to accurately describe a specific level of

quality envisioned by the owner with respect to a particular item.

4) Work on a particular vessel system is described by a contract specification, but not illustrated on the contract drawing of that system.

5) The contract documents do not accurately reflect the present condition of the vessel, yet such insufficient representations were relied upon by the ship repairer in the preparation of the bid.

As an example, in above category 1 (conflicting requirements), we might find language in the general contract clauses which states something to the effect that all material removed from the vessel becomes the property of the contractor and is to be disposed of at the contractor's cost. However, in the contract specifications which address electrical generation, we could conceivably see language which states that a new 200 kilowatt generator is to be installed on the starboard diesel generator drive and that the existing 150 kilowatt generator is to be saved for later re-use by the owner. Different elements of the same contract appear to place ownership of the removed generator in the hands of both parties. A dispute may arise in which the shipyard claims that its bid price was reduced by the anticipated scrap sale of the old generator, demanding that the owner reimburse the contractor for the amount of the reduction if he wishes to keep the old unit. A conflict of this nature becomes possible when the contract is drafted by the owners' attorney and the contract specifications are prepared by

the owners' naval architect. Each entity probably provided contract language common to their respective profession, with the result that the potential conflict was not apparent to the owner.

In above category 2 (incomplete workscope), we might find for example, contract specification language which requires the contractor to provide suitable ventilation for a new, enclosed winch control station. Naturally, the owner foresees branch lines from existing HVAC trunks terminating in supply and exhaust ducts within the enclosed station. The contractor however, views this specification as merely requiring that one of the glass windows in the control station be of "slide open" construction.

An example of above category 3 (level of quality) may result from contract specification language which requires that the contractor provide a positive means of preventing moisture from entering electrical cable insulation in way of cable termination fittings. The owner foresees that the only "positive" means of accomplishing this requirement is through the installation of heat-shrink tubing or boots around the termination fittings. The contractor however, sees only the need for several turns of good electrical tape.

In above category 4 (items not on drawings), we might make an example of contract specification language which requires that the contractor provide the means for washing down all exterior decks with fresh water. The associated contract drawing of the fresh water distribution piping may not depict the branch

lines and hose connection valves needed to fulfill this requirement, as the design of the washdown system is to be performed by the contractor. The potential for dispute arises if the shipyard estimator bases his calculations only on the piping and valves depicted by the contract drawings, without an in-depth review of the contract specifications. The specification language was intended to provide the contractor with maximum flexibility in the satisfaction of an operational requirement, but in the end, all the contractor sees is a conflict between contract documents.

In above category 5 (present condition of vessel), a potential for a dispute may arise from a contract specification requirement for a new 120 volt lighting circuit to be installed. The vessel's original as-built drawings, which had been included in the contract document package, show that a nearby existing 120 volt lighting distribution panel contains two spare circuit breaker slots, either of which would be suitable to carry the required new circuit. When the contractor attempts to install the new circuit however, he discovers that modifications to the vessel's electrical system have occurred during its service life, which obviously do not appear on the original as-built drawings. The contractor finds that the "spare" breaker slots have been utilized and that he is now faced with the need to install a complete new distribution system from the machinery room main switchboard.

Other notable sources of contract disputes result from the failure of the

contract documents to adequately address costs associated with change order work, the failure of the contractor to provide adequate scheduling of the project and owner claims of damage to existing vessel structure or equipment.

While most contracts contain language which addresses the procedure for approval of any change order work, many fail to appropriately address the various cost components of change work. Owners are often surprised to find that change order proposals may utilize a higher labor rate compared to their contract price divided by estimated production hours. They may also be surprised to find that the shipyard imposes a handling mark-up on all materials purchased or subcontract labor provided. Still another surprise may take the form of costs included by the shipyard for elements of delay and/or disruption. While none of us would prefer to be the recipients of "extra-cost" surprises, the real danger in this case is that these unexpected costs will be challenged or disputed by the owner.

Ship repair projects can fall behind schedule for a wide variety of reasons. If a contractually mandated delivery date for the project is not met by the contractor, he may face liability for liquidated damages as specified by the contract. In many cases, the contractor has fallen behind due to his failure to provide realistic and effective project scheduling. Project scheduling performs two important functions -- first, scheduling is a planning tool intended to maximize control over a project, and second, scheduling serves as a project-history document.

As a planning tool, a well-maintained Critical Path Network (CPN) schedule is an indispensable aid in tracking and prioritizing work activities and resources. A CPN schedule provides not only a snapshot of a project's overall progress, but also provides guidance to the project manager in planning for both the short-term and the long-term.

Scheduling is a dynamic process which begins by placing planned activities on a scale of time and then updating on a regular basis to reflect actual progress and revised estimates of the duration of activities. A schedule's critical path reveals which chain of activities spans the longest period of time, thereby establishing the feasible contract completion date. The critical path is thus important in prioritizing activities in the near term, while indicating whether adjustments will be required in order to meet the project completion date and contract milestones. In addition, the impact of proposed change orders can be readily assessed using a CPN schedule -- such information gives the shipyard not only an advantage in negotiating change order prices and time extensions, but also the proper perspective to avoid contractual disputes.

As a project-history document, reasonably accurate schedules are useful in two respects. Schedules of previously executed projects are a valuable source of information for estimating and bid preparation purposes. Perhaps more importantly, a well-documented schedule can be an effective means of demonstrating causes of delay and resolving dis-

putes over what was done and when it was done.

It should be stressed that a schedule's primary purpose is to serve as a planning tool -- it does not represent a commitment by the shipyard to perform every individual activity on its target date (other than project completion and critical milestones per the contract). A schedule printout showing activity dates does not mean that those dates will be met exactly, as the dates are always subject to change. The shipyard project team uses the schedule as a tool to help set priorities and aid in decision making. Since it is the shipyard's responsibility to perform the contract work in a timely manner, the shipyard decides how the project will be carried out. At the same time however, a shipyard bears full responsibility for all of its scheduling decisions. In practice, a schedule cannot precisely mirror physical reality, much less predict impending or unforeseen events and their consequences. Even the best maintained and diligently updated schedules lag behind the present by some amount of time. Proper preparation and updating of project schedules however, represents an extremely effective tool for contract dispute avoidance.

Another obvious, but often overlooked, source of disputes is the claim of damage to the vessel while in the contractor's custody. In preparing to redeliver the completed vessel to the owner, a contractor may find that older electrical or electronic equipment, which was not disturbed during the project, suddenly doesn't work. The typical owner reply will

be that the equipment was working fine when the vessel arrived, so it must have become damaged during the performance of the contract work. Further, an owner may point to scratched joinerwork or torn furniture upholstery and claim that these conditions did not exist at the time of the vessel's arrival at the contractor's facility.

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#### **4. Recommendations for Avoiding Contract Disputes .....**

Having touched briefly on some of the typical origins of contractual disputes, we may now examine means of avoiding them. Clearly, the contract (including all of its associated components) is the governing document for a ship repair project. The single best means of avoiding contractual disputes is the full knowledge and understanding of the precise requirements of the contract.

We have demonstrated several examples of where the written language of the contract may be less than sufficiently precise. The time to clarify such language is before the contract is signed. Most requests for shipyard bids provide for a technical clarification process prior to the submittal of the bid. Further, once a shipyard has been selected by an owner, there is generally ample opportunity for pre-contract signing negotiations which may "streamline" the language of the contract. These forums should be used to full advantage to ensure that both parties understand and are in agreement with respect to each other's needs, intentions and responsibilities. Simply put, the potential for contract disputes is inversely

proportional to the precision of the contract language.

The goal in such interactive exchanges should be to structure the contract in such a way as to minimize the chances of disputes arising over the scope of work covered by the basic contract and over the costs and time required for any subsequent changes. For example, a typical ship repair contract may contain any number of "open and inspect" items. The nature of such a repair item makes it impossible for the contractor to be totally aware of the full extent and cost of the work which will be required to complete the item at the time the bid is prepared. If however, the parties have agreed in advance as to the mechanism for pricing additional work, including any indirect effects which can be traced to a specific work item, as well as the mechanism for the estimation of any additional time required for completion of such items, the possibility of a dispute is all but eliminated. The contract should identify the fully burdened, hourly labor rates which the shipyard intends to apply to any change work, as well as any handling mark-ups of material or subcontract invoices related to change orders.

Some owners may be unfamiliar with the concepts and related effects of disruption, acceleration and delay. The shipyard should ensure that the contract addresses such elements, defining a manner in which any disruption is to be estimated and any acceleration is to be implemented. The contract should contain clear cost data for any extended use of the shipyard's facilities. If the contract

includes the provision of any owner-furnished equipment, the shipyard should factor the delivery of such equipment into its planned schedule, then make any adjustments to the contract language necessary to bind the owner to any required delivery dates. The effects of any late delivery of owner-furnished equipment should be anticipated by the shipyard and the contract should address any additional costs or schedule extensions which must be incurred by the owner as the result of late equipment delivery.

Just as the owner may assemble the contract package from a variety of legal and technical sources, the shipyard often "parcels out" a bid package to its various trades for estimation purposes. Our previous dispute example involving piping manifolds may have occurred because the piping estimator was unaware of the requirement for a new electrical switchboard. It is essential that all persons involved with the preparation of the shipyard bid review the complete contract document package. While this increases the bid preparation effort, it provides the proverbial "ounce of prevention" which is truly worth the "pound of cure" which may become necessary for a dispute resolution.

Once the contract has been signed, the emphasis for dispute avoidance shifts to documentation. The potential for resolution of a dispute at the owners' representative/shipyard project manager level is enormously enhanced when a given position on an issue is supported by irrefutable proof. In our example of an

owner's claim for scratched joinerwork or torn upholstery, a dispute is easily avoided by performing a simple joint "walk-through" of the vessel by the owner's representative and the shipyard project manager with a video camera immediately upon the vessel's arrival at the contractor's facility. Such a survey requires surprisingly little in the way of time or cost and can resolve many issues before they ever become disputes. The operation of any piece of the vessel's equipment can be demonstrated before the departure of its crew, thus giving the shipyard project manager the opportunity to reveal any inherent defects before the shipyard assumes custody of the vessel.

Once the project work is commenced, good project documentation generally requires effective record-keeping. We have already pointed out that the maintenance of an accurate, regularly updated project schedule can become an invaluable project record. Of equal importance are the daily observations of the field supervisory personnel. All craft supervisors should maintain a daily diary of their activities. By carrying and using a simple pocket notebook, records can be compiled with regard to dates and times where specific activities are commenced or completed, times when crews are waiting for material or the completion of other work, as well as any problems which develop. The contractor should require all of its field supervisors to translate their notes into a daily report to the project manager. While it is recognized that many craftsmen are not well-disposed toward administrative tasks, a

daily report of this nature does not need to be prohibitively cumbersome. A field supervisor's daily report to the project manager may be short, sweet and handwritten, so long as it provides a legible record of the days activities. The positive benefits of good reporting can be substantial.

While any significant problem will probably be taken up with the owners' representative immediately, the shipyard project manager should plan to translate the information obtained from his supervisors' daily reports into a weekly activity report. This weekly report should represent the agenda for a weekly meeting between the owners' representative and the shipyard project manager. Any comments of either party should be reduced to writing and appended to the weekly report and it should be signed by both representatives. It becomes extremely difficult to later initiate a dispute over something that has been acknowledged or agreed to in writing. Developed in this manner, the weekly report also provides pertinent information for accurate updating of the project schedule. Moreover, arbitrators and judges usually find that contemporaneous documentation is more credible than stories written later by experts and attorneys.

Nearly all ship repair projects involve change order work at some point. The change order is actually a modification to the contract, which is typically prepared by the shipyard for the owners' approval and acceptance. While we are discussing documentation, it is appropriate to point out that the owner is usually not respon-

sible for any change order costs until he has agreed to the change in writing. The situation has arisen more than once where an owners' representative has verbally agreed to a conceptual change, but, after reviewing the shipyard's cost proposal for the work, has decided that his budget cannot accommodate the proposed additional work. If the shipyard began any material procurement or actual production work on the basis of the owners' verbal expression, it may find itself with no avenue for recovery of its costs.

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### **5. Summary .....**

We have examined some of the basic issues which surround contractual disputes in the ship repair industry. The information presented can only lead to the conclusion that the time, effort and cost of avoiding a contract dispute will be significantly less than the time, effort and cost of resolving a contract dispute. The keys to dispute avoidance are the recognition of potential sources, the incorporation of precise contract language and the maintenance of accurate project records. It is clear that, by exercising just a bit of additional diligence in the preparation and execution of a ship repair project, the various burdens of contract dispute resolution can be substantially averted.



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  - What can go wrong? ... What are the downside risks?
  - How can those risks be minimized?
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- What really went wrong? ... Why? ... Was it avoidable?
  - Who is responsible for the failure, cost, delay or accident?
  - Did the problem originate in contracting, design, manufacturing, operation or maintenance?
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