



## Specifying Contract Deliverables Tangibles, Procedures, Documentation, Rights

Numerous contract disputes arise when it comes time for the purchaser (usually a ship owner) to collect the contract deliverables from the seller (usually a shipyard). Suddenly, at a crucial time, the two parties realize that they have significantly different understandings of the content, form, format and timing of the deliverables. The ensuing disputes are essentially differing interpretations of the ambiguously defined contract deliverables. Those problems typically arise due to either assumptions not being valid or lack of sufficient resources being applied to the contractual specification of the deliverables.

Often the ship owner's specification writers believe they don't have to prepare lengthy specifications because "they know what we mean." No, they (the contractor or shipyard) do not know what you (the ship owner) mean. Word of advice to ship owners: spell it out in the contract specifications, with ample detail.

When preparing the specifications for any design work, ship construction, ship repair or major items of equipment, the purchaser's team has to clearly define each and every one of the contract deliverables in terms of content, form, format, timing and (if applicable) place of delivery.

**Tangibles:** When a vessel is to be constructed, the delivery of the vessel itself constitutes the hand-over of the largest item of tangible property. If the owner is expecting the shipyard to turn over any other tangibles, the contract has to provide their identification and any relevant information about the delivery process. For new construction, this is rarely a problem. But when a vessel is being converted to provide a different functional capability than it previously could accomplish, there are usually many items of materials and equipment that are being removed from the vessel that will not be re-used on the

converted vessel.

The contract has to define the ownership of those items. The contractor may have included in pricing a credit for the sale of the scrap materials, unless the contract clearly

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### LESSON LEARNED #61: Unusual Vessel = Unusual Costs

A special purpose tourist vessel of unusual form was to be designed and constructed to achieve the purchaser's performance requirements. The design-and-construction team stated in its bid that its planned analyses would be sufficient to receive regulatory and classification approvals. This was to be the first such vessel designed and constructed by the team. All payments by purchaser were to be for construction costs paid on a cost-plus basis. When the design was submitted for classification and regulatory approvals, numerous additional studies were required due to the unusual form and planned mode of operation. A number of physical impact analyses that had not been anticipated were required. Detailed finite-element analyses had to be revised several times. Operational casualty impact analyses and rescue plans had to be developed and submitted to the controlling regulatory agency. The problem was that none of those expensive, additional studies qualified for additional payments by the purchaser since their considerable costs did not arise from actual construction.

**The lesson learned:** First, it is hazardous to assume that the requirements of classification and regulatory bodies necessary for approvals pertaining to new forms of vessels can be anticipated to be as limited as for prior forms of vessels. Second, contractors should assure that the limited basis of their anticipated costs are included in the contract, thereby providing for possible payment when that basis is exceeded due to third party requirements.

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states otherwise. If items of equipment are coming off the ship, are they to be preserved and removed carefully with a spanner, or can the contractor remove them with a cutting torch? If the removed items are to be sent to the owner's warehouse for use on a different project at some later time, which party is responsible for packaging and transportation? If control cabinets are being removed, temporarily or permanently, are all the cable connections to be labeled, or can the contractor ignore that step?

The central theme here is that the owner's specification has to address every aspect of materials and equipment that is being moved off or onto the ship in order to ensure that the contractor has allowed for fulfillment of those responsibilities in its pricing and scheduling.

**“...address every aspect of materials and equipment being moved off or onto the ship to ensure that the contractor has allowed for fulfillment of those responsibilities...”**

**Procedures:** When a ship is being constructed, repaired or converted, numerous procedures are needed to demonstrate the proper installation of all operational equipment, including control, alarm and monitoring. Those demonstrative tests and procedures can be quite extensive, especially when data is being communicated between items of equipment from different manufacturers. In order to allow the tests and trials to be adequately scheduled, the shipbuilder needs to know in advance, through the specifications, the number, extent and duration of such tests and trials.

For any particular item of equipment, will a two-hour test in five conditions be sufficient, or does it have to be an eight-hour heat run incorporating 12 test conditions? Can electrical system tests be made using the ship's equipment as a test load, or does an external load



bank have to be used? This is particularly challenging if the shipbuilder is merely an observer to tests and commissioning being conducted by tech reps for owner-furnished equipment. In such instances, the shipbuilder needs to know in advance what support services and resources have to be provided, what conditions the tech rep needs to perform his tests, how those tests will impact the shipbuilder's schedule, etc.

An example of a failure of the owner to identify the needed test procedures pertained to the agenda for dock trials and sea trials of a new special service vessel. The shipbuilding contract incorporated a detailed description of those trials. As construction was nearing completion, the owner's team realized that it had inadvertently inserted into the contract the trials agendas it uses for ship repairs, not for new ship construction. After realizing the error, the owner's team expressed to the shipbuilder that a far more extensive set of tests and trials was needed, as it was a new ship, not a repaired ship. The shipbuilder presented a proposed change order incorporating cost and schedule impacts. The owner rejected it, expressing that it was unreasonable for the builder to expect that the owner would accept delivery with a limited scope of tests and trials. The builder responded by reminding the owner that adherence to the written contract is paramount, and that verbally altering the workscope (necessitating greater resource expenditures and having schedule impacts) without appropriate compensation (money and time) is not consistent with fixed price contracts. The owner directed the builder to comply. A mediated post-delivery settlement resolved the issue, mostly in favor of the builder.

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It is noted that the costs of lawyers, experts, consultants and the mediator could have been avoided if the owner's team appreciated that the contract's fixed price and fixed schedule were based on the written contractual requirements, not on the owner's verbally expanded 'correction' of those requirements.

**Documentation:** The number of documents that have to be delivered by shipbuilders to owners is often staggering. Many of the documents are "process" documents, such as the megger reading for electrical cables, the temperature reading for coating applications, the comments on drawings. Those process documents have short lives. Many other documents have to move between the parties. Owners may require a review of draft purchase orders and purchase technical specifications for major items of equipment before the shipyard issues the purchase order to the vendor. Open/inspect reports (condition or survey reports) during ship repair are plentiful. As-built and as-fitted drawings are long-life deliverables, as are the operating manuals for equipment and systems. Copies of the shipyard's communications with classification are sometimes contract deliverables. Draft test and trial agendas, subject to review and acceptance by the owner's team, are often deliverables

. The list of documentation deliverables is not endless, but it is long. Both parties need a comprehensive list of all the contractually defined documentation deliverables. Both parties need to actively monitor the issuance and receipt of those deliverable to ensure that they are all achieved in a timely manner.

In addition to the documentation deliverables that are identifiable at the time of contract execution, the need for many others will arise in association with change orders. If the change order alters an element of vessel configuration, the corresponding ship documentation has to be altered as well.

An example of the consequences of a failure to follow-up on documentation for a change order involves a research vessel. The vessel was having a new model of a recessed array fitted to the bottom of the ship. Prior to arrival of the new array, while dry docked, the old array was removed after the pressure-compensating fluid was drained and the transparent faceplate was removed. The old array was slipped out between bilge and keel blocks, and the new array was brought in the same way. At that point, it was realized that the new array required a

longer recess in the hull. The enlargement of the recess in way of fuel tanks and bilge blocks, constituting a surprise change order, was achieved, albeit painfully. Four years later the vessel was entering dry dock for special survey. As the blocks contacted the hull, an oil sheen appeared. The cause was a broken faceplate, where bilge blocks that should have been permanently removed from the docking plan—but were not—landed on the faceplate. In other words, the failure four years earlier was that the owner did not require a change in vessel documentation (the docking plan) when the physical aspect of the change order merited the alteration in the plan.

**Rights 1:** One of the rights that has to be addressed during ship design and ship construction is that of intellectual property rights ("IP"). Simply, it is necessary to identify which party owns the rights to the new design of the ship, or the system, or the component. An example of the failure to address this issue during contract formation involves the construction of 4 sister vessels for an organization that operates vessels but also possesses its own shipyard. When the owner was going to dock the second of the four vessels for its first dry docking at an independent shipyard, the owner asked the

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### LESSON LEARNED #62:

#### Oral vs Written Specifications

After a containership's port bridge wing support had been significantly damaged, the owner's representative orally asked the shipyard at which the vessel was undergoing a classification special survey to replace that support to be the same as the starboard bridge wing support. Several days later, upon inspecting the replaced port bridge wing support, the owner's representative found the new support to be slightly deformed. Upon investigation, he found that the starboard support had been slightly deformed at some previous time, but not sufficiently to merit repair. Nevertheless, the shipyard interpreted his direction to require an exact duplicate of the deformed starboard one, not one as originally constructed without deformation.

**The lesson learned:** It is likely that a benefit will result from spending 10-20 minutes to develop a well-thought-out and written specification (with sketches if appropriate), rather than assuming that the contractor's personnel will understand your orally-expressed intent.

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shipbuilder to send the docking plans unique to vessel No. 2 to that independent shipyard. The shipbuilder responded that the owner could use the IP of the docking plans only at the owner's shipyard or the builder's shipyard, but not at any independent shipyard. *Why?* The docking plans are part of the IP package, said the builder, and the contract did not grant the owner/purchaser IP rights. The owner then had to negotiate to purchase the IP rights, providing the builder with a nice bonus.

**Rights 2:** Contracts for vessel construction often give the shipbuilder the opportunity to present alternate brand names for equipment initially nominated by the owner to be a different brand name. In such instances, the owner contractually reserves the right to reject the shipyard-selected vendor on the basis that the offered equipment is not "equivalent" to the owner-nominated one. The rejection cannot appear to be arbitrary without creating disputes because it may look like the owner never intended to accept an alternate, or that a back-deal has been made. Instead, during contract formation, the owner has to identify the parameters or characteristics that will be considered to determine the question of equivalency: material content, availability of spares or tech reps, weight, noise and vibration, power consumption, language of manuals, mean time between failures, place of manufacturing, etc.

**Place of delivery:** Not all spare parts are kept aboard a vessel when the spares might serve any of several sister vessels. When a shipyard is procuring spares and supplies for an owner, the owner's team should specify the location of delivery of those materials. Possible choices are: (a) shipyard warehouse; (b) dockside; (c) ship's deck; (d) stowed aboard the vessel in designated lockers or spaces; or (e) owner's off-premises warehouse. That is, the owner's team has to investigate these issues before completing the specifications. Also, this can get to be an issue when the item is owner-furnished equipment ("OFE") being delivered to the shipyard. The place and time of delivery has to be specified, such as at the shipyard's warehouse or dock. If that is specified, the shipyard should resist doing a 'good deed' by taking delivery at some location other than that identified in the contract.

A further possible issue: is OFE considered delivered when it passes through the shipyard gate, or does it have to undergo an owner's incoming materials inspection

before it is officially delivered to the shipyard? Word of advice to shipyards: do not accept OFE unless you are satisfied that it is being delivered to the shipyard in installable condition or in the condition described in the contract specifications.▲

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### DISPUTE AVOIDANCE Reminder to Vessel Designers

When a vessel owner is purchasing a custom-designed vessel, the usual process is that the owner's designers prepare the contract plans and specifications. After contract execution, the shipbuilder's design staff completes all the design and specification details necessary to convert the contract design into the tangible vessel and associated documentation. At the time of contract execution, the owner is representing that all the owner's decisions have been made, and that the shipbuilder then has the responsibility as well as the right to make all the other decisions necessary to construct and deliver the vessel, provided that all of those decisions are consistent with the contract requirements. This means that the owner's designers have yielded all remaining decision-making to the shipbuilder. Accordingly, it is appreciated that the owner's designers have only one opportunity to control any details of the components of the vessel without costly change orders, namely, before the contract is executed.

If systems or components are especially critical to the vessel's mission capability, the owner's designers must address their details in the contract plans and specifications to ensure their incorporation in the vessel. There is no fundamental requirement that all the contract plans have the same amount of detail. The owner's designers are encouraged to incorporate as much well-engineered detail into the contract design necessary to ensure that the vessel can achieve the operational goals without the owner's team attempting to micro-manage the shipbuilder's detail design process. This perspective is derived from the results of multiple instances of litigation, arbitration and mediation of contract disputes.▲

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# Casualty Analyses and Expert Witness Testimony



Fisher Maritime routinely prepares maritime casualty analyses and provides the expert witness services to present them to courts. These are additional to Fisher Maritime's analyses of situations and claims pertaining to ship construction, repair and design.

The casualty analyses cover the range of vessel capsizing or sinking, vessel collisions, navigation errors, boating accidents, and equipment failures, among other underlying causes. Each year we provide numerous expert reports analyzing the underlying factors and causes of the accidents, whether they are design issues, operational errors, equipment maintenance, or safety management issues. Fisher Maritime has presented forensic analyses in connection with maritime claims involving all types of vessels, including commercial, offshore, naval, megayachts, and recreational.

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- (a) structural failure of a barge while being towed;
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- (e) severe personal injury due to inadequate design of recreational boat hull form.

Additional examples are described on our website, <http://fisher-maritime.com/samplecases.html>.



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If your organization has seven or more persons whose professional capabilities could benefit from such training, it is cost-effective to bring the program to you, instead of having those persons travel to a distant open-registration program. For details and information, send an inquiry to: [register@fisher-maritime.com](mailto:register@fisher-maritime.com). (Can you identify these 18 countries in which the course has been presented? Hint: these are internet domain identifiers. AU, CA, DE, ES, GR, HK, HR, MY, NL, NO, NZ, PA, PL, PT, SE, SG, UK, and US.)▲

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Any project at a shipyard is certain to involve a complex relationship between the Owner's and Yard's organizations, as well as multiple supporting organizations. Cost controls, schedule impacts, changes, unexpected conditions aboard the vessel, engineering problems, and supplier delays, among many other factors, create a very challenging situation for all parties. To obtain more insights into the management of these many types of problems, consider reading the on-line articles and papers that are available at the Publications section of the Fisher Maritime website: [www.fisher-maritime.com](http://www.fisher-maritime.com)

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