

THE QUEEN MARY 2



Introduction

- The Queen Mary 2 (QM2) is the world's biggest cruise ship. It is 1,132 feet long (147 feet longer than the Eiffel Tower is high) and it weighs 150,000 gross tons. The vessel will carry 1,253 crew and 2,620 passengers and will be based at Southampton.
- The total cost of QM2's construction was approximately £550 million. The owners of the cruiser are Carnival through their Cunard brand. The QM2 was built by the French engineering group Alstom over a period of two years at Alstom Chantiers de l'Atlantique shipyard at St Nazaire in western France.
- The QM2 was officially launched on the 8th January 2004.
- The naval architect for QM2 was Stephen Payne. He played a large role in the success of the project and it should be noted that his responsibilities went beyond those that would normally rest with a Naval Architect. After designing the ship he acted as the pre-construction Project Manager before being promoted to Director of Project Management for this ship and others Carnival had under construction at the time. His endeavours have recently earned him recognition in the form of an OBE. He accepted this award "as recognition of the whole team's effort that contributed to such a wonderful result". The Royal Academy of Engineering has also awarded him a "special" prize in January 2006 for his work related with QM2.

COMMERCIAL

Engaging their suppliers

- From May 1998, Stephen Payne spent 2 years designing the QM2. Carnival then sent the design to five ship yards that they felt would understand difference between liner and cruiser. Potential bidders were selected on the basis that two had worked with Carnival previously and the other three were yards that in the past had built prestige passenger ships.
- Regarding sub-contract suppliers, the architect has a makers list. Carnival would normally agree with the yards that they can choose between one of three suppliers. Carnival agrees in advance which three suppliers they could use. The yards would then go and tender for the sub contractors. Carnival would then have the opportunity to accept or reject the yard's sub contractor.
- If Carnival rejected the shipyard's preferred supplier in preference for one of the others on the Makers List then they would be required to compensate the shipyard for any resulting increase in costs. However, having accepted a supplier (even though they might effectively have been nominated by Carnival), the shipbuilder would accept total liability for the provision of that equipment.

Risk Management

- Risks and opportunities were not systematically explored prior to contract for the QM2, although experience and good practice were employed to evaluate all aspects of the ship's design. Following the merger between Carnival and P&O/Princess the combined newbuild group is in the process of developing a comprehensive database of risks. A new employee has just joined the office to examine risks and maintain the database.

Procurement Strategy

- Sent out 'mini' spec and arrangement plan. The outline spec had been designed in 2 years by a Naval Architect, Stephen Payne OBE. This included the concept design, layout and weight estimates, basic technical parameters, power and speed.
- Five potential contractors entered the competition. This number soon reduced to two. These remaining bidders worked equally for about 4 months developing the project. Ideas that both of them had were shared between all parties.
- Price, delivery and time are important deciding factors for the decision process for who wins the competition. The specification offered by competing yards would be very similar.
- At the March 2000 Miami Shipbuilders conference. The potential contractors attended with one of them putting an offer on the table. In line with standard practice, the remaining bidder was given the ball park figure of this bid and given the opportunity to match it. They could not raise the working capital required to fund the building of the ship with a price tag of £550M (20% paid during construction, 80% on delivery).
- The contract was developed about 2 months before they signed it. Carnival gave Chantier's (the winning shipyard) a copy of a previous contract for guidance as to what type of contractual arrangements would be necessary. They adapted it to suit their needs. It was passed to Stephen Payne for review, and then to a lawyer for review.
- Through historic experience, yards have experience and know what to expect contractually.

Incentives / Pricing Mechanism

- Similar types of contract are used for each of the different yards. Type of penalty would be different, dependent on the market. The shipbuilders yards are keen to please the cruise ship/liner operators. Most yards publish their accounts; on the QM2 build, Chantier's made about 6 to 7 % profit.
- Carnival would mention in outline spec anything that would be expected to cost in excess of £30k.
- A letter of intent was produced on 9th March 2000. This was not contractually binding and could be broken by both parties without penalties.
- The contract for ship was signed on 6th Nov 2000 with delivery scheduled for December 2003.
- QM2 had a one year warranty, provided by the yard. Certain major equipments have separate warranties provided by the sub-contractors. Carnival do not have visibility of cost of equipment or cost of warranty, that is kept by the yard. All projects are gauged on price per passenger berth, through life.
- A cruiser would normally have repaid itself within 3-5 years. Carnival work on the basis that 10% of the price of a ship is planning and a portion of that will include bid costs.
- All Carnival ships are produced on firm priced contracts, whereby the price that is contracted for is the price that Carnival pay. There is a very strict procedure for working out how to cost for changes. Carnival's guiding principle is: Don't change anything unless it is going to result in a marked increase in profitability.

- Typically in cruise ship building payment would be made 5% on signing contract, 15% during build and the remaining 80% paid on delivery.
- Carnival has on occasions offered up front payments in order to incentivise contractors. Market forces also incentivise the yards. The prospect of future business is considered the biggest incentive.
- Level of liquidated damages is higher in P and O contracts. However, Carnival acknowledges that they will most likely pay for this somewhere in terms of paying for risk.
- Shipbuilders are also incentivised by pride. Carnival took people from the yard to Cherbourg to keep them focussed.

Contract Negotiation

- Carnival stated very early that they would need to work as a team. Due to good relations for the first time the shipyard organisation gave the complete breakdown of every single cost. They were willing to listen and negotiate with Carnival on very basic costs.
- Once the Letter of intent and main contract had set the price for the ship, both parties were trading different elements of the specification. There was intense negotiation and trading between them.
- Chantier's were building five other passenger ships at the same time. QM2 was resourced at 1.7 – 2 times the level on a normal ship building job.
- Complete planning and bidding process is about 10% of the cost. Therefore if a sister ship was to be ordered it would be about 10% less.
- The contract is considered 'standard'. Contracts do not vary much between yards although certain aspects are negotiated with the ship yards. The naval architect negotiated the specification.
- The contract was preliminary agreed with the yard before review by a lawyer and finally signing. There is no specialist contractual team, other than the lawyer. The naval architect had not undertaken any specialist negotiation training.

Performance Management

- Although Industry standards exist, their application and their interpretation are not consistent across companies. It is very difficult to enforce the standards.
- Carnival would contract to the standards and say in the contract that the standards apply. If the ship builders are not working to the standards, then it is unlikely that Carnival would enforce it on principle; only if it is necessary and very important.
- Ship builders would typically increase the cost of the next ship in order to cover the additional work associated with meeting the standards on an earlier one.
- If it is a new piece of equipment or a larger model of kit than they have had previously would typically go and visit the supplier. Carnival places great importance on relationships with suppliers, especially as the delivery period is relatively short. After delivery the relationship for maintenance will be with the ship builder for the first year during the warranty period before reverting completely to the ship owner.

- There is a group in Miami called Global Sourcing. They buy parts in volume on behalf of the various Carnival brands and enable significant economies of scale to be achieved.
- Maintenance and support for some of the smaller parts have service level agreements. Carnival would then have a number of contracts with suppliers for maintenance.
- Ship building is done centrally. Once ships are delivered they are handed over to the operating companies (brands). However, maintenance is a consideration in designing the ships. The overall designs aim to be as maintenance friendly as possible.
- Carnival have had variable experience of yards meeting contractual delivery. Prototype ships have historically been very bad. Some could have been rejected on grounds of incompleteness; however, there can be a commercial justification to accept a vessel in poor condition.
- QM2 was completed and delivered entirely to contract. The yard can be credited with wanting to deliver the ship and be seen to be delivering a prestige product. It is not felt that any specific intervention by the naval architect was essential to achieving this smooth delivery. The relationship between buyer and yard is most important. The architect would not personally do things differently. The individual relationships with people are very good and this made a big difference.
- They experienced some very big issues along the way. However because of the relationships enjoyed by the team, these were all worked out.
- Carnival's current new build programme is spread throughout four shipyards. Three in Italy (all part of Fincantieri) and one in Germany (Meyer Werft). There are four project managers, each residing in one of the shipyards. With QM2 the naval architect fronted up all the arguments with the yard. Historically a dispute resolution procedure has never been required to be used. Problems were generally resolved amicably with the yards. Early identification of problems by ship yards helps prevent this. In fact, ship yards typically make proposals to ship buyers off their own bat.
- For QM2 the naval architect did most of the negotiation and had formal training to do so. Most of this was left to common sense.
- Acceptance criteria are set out in the contract. Typically, these would require Dock Trials, factory trials, onboard (alongside) trials and sea trials. For QM2, there was comprehensive testing with measurements being made in each cabin. The ship had to run for 8 hours at full power without anything go wrong. There are no formal aspects for maintainability or reliability within the contract except some statements that equipment has to be to marine grade/quality with a view to ease of maintenance/reliability. There has never been a problem regarding interpretation of acceptance criteria.

Lessons Learned

- At the time there was no formal process for learning from past experience. This was not regarded as a problem as small teams and good working relationships facilitate the dissemination of good practice. A more rigorous approach using a database is now in place.

CULTURE

Relationships

- When a naval architect develops a specification, they may be satisfied that they have covered everything. However, the interpretation of the written word may be different from one yard to the next. In fact, it is impossible to catch all the details before the contract. This is why relationships are so important. They ensure that communication does not become acrimonious due to activities such as unexpected or obtuse interpretation of the specification.
- Most contracts are essentially the same with all the ship yards. The interrelationship between the individual project management teams is the important factor affecting success or otherwise.
- Carnival had a team in the yard throughout the construction, headed up by a project manager. Stephen was based in London and visited as and when required (about twice a month). Stephen believes this was an incentive for them to meet milestones.
- The naval architect (Stephen) made token gestures to reward the staff of the ship building yard. Throughout the build process, he awarded badges to employees who had made contributions above and beyond what the ship builders would typically expect. This instilled pride in the employees and won Carnival a reputation as a good customer. The naval architect also took the ship building parties to his house for a barbeque. Building the relationship and building trust is very important.
- The contract does not set out anything about relationships. It is important from Carnival's point of view to be seen as a yard that is reasonable to work with. Yards will typically charge 5% more to work with difficult ship owners on the basis of 'aggravation factor'. Carnival value sustainable relationships. They see that if you 'squeeze' that extra bit out of a ship yard once, you may benefit in the short term but they will not give you things a second time.
- Relationships are spoiled by ship owners making changes and not being willing to pay for them or demanding things that they are not willing to pay for.
- Carnival was placed at an advantage as they had a relatively small number of people running the projects that are well known and respected within the industry. Even the Chairman of Carnival gets personally involved in dealing with contracts.