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Ship Major Conversions

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INTRODUCTION

Conversion of ships business has undergone for many years, while CCS has been in this business already for more than 20 years.

Conversion of ship may include many different kinds of cases, such as partial conversion of a vessel or conversion to a different type. Kind and extent of conversion will be based on customer's expectation for market demand. Conversion survey may concur with special or any other periodical or independent survey.

Safety requirements are provided by class rules and relevant international conventions, such as Tonnage, Loadline, SOLAS and MARPOL, etc.



CCS EXPERIENCE IN MAJOR CONVERSIONS

For decades, CCS has successfully carried out a lot of major conversions to meet clients' growing demand, and has formed its unique risk-based mode of conversion survey procedure and technical support, including:

- ⊙ Bulk carriers converted to container ships;
- ⊙ Bulk carriers/tankers converted to large bridge cranes carriers;
- ⊙ VLCC converted to VLOC;
- ⊙ Cargo ships converted to asphalt carriers;
- ⊙ Bulk carriers/tankers converted to trailing suction hopper dredgers;
- ⊙ VLCC converted from SH to DH, etc.

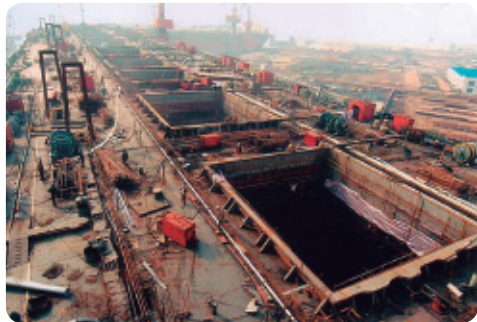
Due to the fast growth of China's economy, development in different industries has evidently boosted the demand for more varieties of ships. Thereby, in the mean time, the changes brought by CCS would demonstrate to the industry the advantages of such tailored ship conversion solutions to clients. For example, CCS has recently completed the world's first conversion of VLCC into VLOC. The success of this assignment has not only brought huge profits for the ship owner but satisfied China's increasing need for ore. At present, China's shipyard has already signed up contracts with ship owners around the world for more than 30 VLCC to be modified into VLOC.

RISK - BASED PROCESS

1. Demonstration of Technical Solutions to Ship's Major Conversion

- (1) Discussion of Technical solutions in principle
- (2) Identification of Compliance with the International Conventions, CCS Rules, IACS unified requirements, Additional Statutory requirements from Flag States
- (3) Analysis of Rules Check , Calculation & Review
- (4) Stress Analysis by Finite Element Method for scantling of the vessel, hot points identified
- (5) Detailed and Complete Technical Design Finalized
- (6) Communication with Flag States





2. Conversion Program Demonstrating of actual modification works/Inspection at site

- (1) Preparation before construction
- (2) Sequence of conversion
- (3) Workmanship & Procedure documents
- (4) Control and monitoring of ship deformation during conversion
- (5) Tolerance Control of fit-up

3. Assessment and training course to Shipyard performing conversion

- (1) Building facilities in the shipyard including dock, wharf, workshops, main machinery equipments
- (2) History of building and repairing of different kinds of ship
- (3) Quality Control system and technical competence
- (4) Approved or Recognized workmanship or Procedures
- (5) Safety, Health, Environment System (S.H.E. System)
- (6) Non-destructive Examination
- (7) Training Course to Stakeholders for the Conversion Project
- (8) Quality Control of Sub-Contractors



4. Technical/Management Review, Lessons to be learnt and Further Improvement

5. Technical Support during Ship in Operation

- (1) Inspection at Loading/Discharging Terminals
- (2) Checklist and Guidance of scantling inspection by Crew
- (3) Support for Ship Safety Management

6. International Conference or Seminar

- (1) Singapore Sea-Asia Conference
- (2) Joint Seminar with Flag State



CONCLUSION

On the basis of risk adverse nature in the process for ship conversion, CCS will provide the ship owners with the support of monitoring the whole process with state-of-the-art quality control service to guarantee the conversion will meet the expectation of the ship owner in terms of the new ships' quality, safety as well as productivity of the vessel.