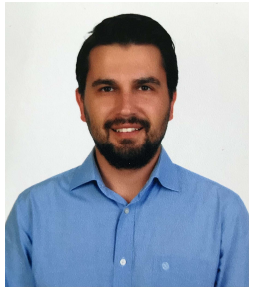
Dry-Docking Process

Sertac Kesebol

14.05.2024



Certificate of Achievement
Level II

This is to certify that:

Sertac Kesebol

has successfully completed the

Corrodere / PPG Protective and Marine Coatings Inspector Training Programme in association with MPI

Education :

2005 – 2011	**Anadolu University (Eskisehir)**
	Business, Bachelor Degree, 70/100
2019 –	**Yildiz Technical University (Istanbul)**
	Naval Architecture and Marine Engineering, PhD.
2008 – 2012	**Yildiz Technical University (Istanbul)**
	Naval Architecture and Marine Engineering, Master Degree, 3,70/4,00
Thesis	:(Breakdown and Reasons in Dynamic Parts of Marine Diesel Engines)
2003 – 2007	**Yildiz Technical University (Istanbul)**
	Naval Architecture and Marine Engineering, Bachelor Degree, 3,27/4,00
Thesis	:(Paint to be used on Vessels/Ships and Antifouling Paints)
2002 – 2003	**Yildiz Technical University (Istanbul)**
	English School of University
1998 – 2002	**Tuglacılar High School (English) (Tekirdag)**
	High School

Experience :

November 2021 – ..... **SGMCOATING YUZEY TEKNOLOJILERI SAN. TIC. LTD. STI.**
Managing Director

March 2011 - November 2021 **PPG INDUSTRIES KIMYA SANAYI VE TIC. A.S.**
PPG/SIGMA Marine Key Account Manager

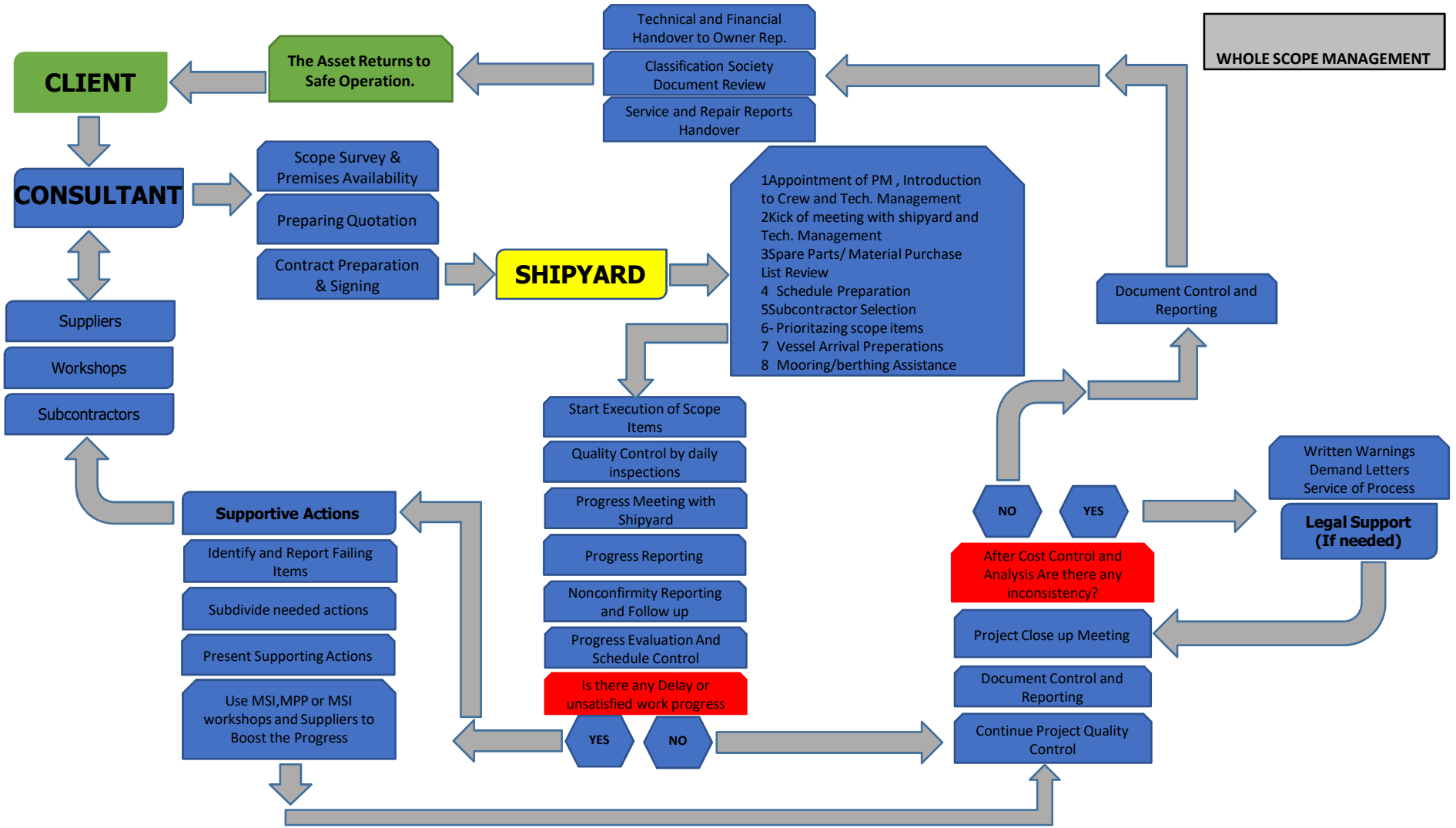
February 2008 - July 2009 **UNISERVICE TURKIYE**
Executive for Sales, Marketing, Purchasing and Supply

November 2007 - February 2008 **UNISERVICE TURKIYE**
PPG/Ameron Technical Advisor for Paint
- According to technical specification and current issues, controlling the surface preperation, paint applications, checking the conditions after application and reporting the results.

Internship :

August 2009 - March 2010 **ARKAS DENIZCILIK NAKLIYAT A.S.**
Engine Staff on MV Tomriz A

1. Docking
2. To Be Prepared For Docking
3. Shipyard Selection
4. Docking Entrence
5. Drydocking Operations
6. Sea Trail and Leaving


CLIENT
The Asset Returns to Safe Operation.
Technical and Financial Handover to Owner Rep.
Classification Society Document Review
Service and Repair Reports Handover
WHOLE SCOPE MANAGEMENT
CONSULTANT
Scope Survey & Premises Availability
Preparing Quotation
Contract Preparation & Signing
SHIPYARD
1Appointment of PM , Introduction to Crew and Tech. Management
2Kick of meeting with shipyard and Tech. Management
3Spare Parts/ Material Purchase List Review
4 Schedule Preparation
5Subcontractor Selection
6- Prioritazing scope items
7 Vessel Arrival Preperations
8 Mooring/berthing Assistance
Document Control and Reporting
Suppliers
Workshops
Subcontractors
Start Execution of Scope Items
Quality Control by daily inspections
Progress Meeting with Shipyard
Progress Reporting
Nonconfirmity Reporting and Follow up
Progress Evaluation And Schedule Control
Is there any Delay or unsatisfied work progress
YES
NO
Supportive Actions
Identify and Report Failing Items
Subdivide needed actions
Present Supporting Actions
Use MSI,MPP or MSI workshops and Suppliers to Boost the Progress
NO
YES
After Cost Control and Analysis Are there any inconsistency?
Written Warnings
Demand Letters
Service of Process
Legal Support (If needed)
Project Close up Meeting
Document Control and Reporting
Continue Project Quality Control

1. DOCKING

- It is the process of repairing the ships that come to the pool for repair by placing them in floating or concrete pools and placing them on blocks called "KEEL BLOCK" in order to carry out the repair operations that need to be done on the underwater parts (propeller, rudder, shaft, etc.).

Surveys

Survey	Category	Location	Last date	Due from	Due to	Postponed
Main class renewal	Class	Shanghai FiS	2019-08-15	2024-04-30	2024-07-31	
Main class intermediate	Class	Auckland	2022-05-21	2026-04-30	2027-10-31	
Main class annual	Class	Vancouver	2023-05-24	2024-04-30	2024-07-31	
Hull items	Class	Auckland	2022-05-21			
Machinery items	Class	Shanghai FiS	2019-08-15	2024-04-30	2024-07-31	
Lifting appliances	Statement Of Compliance	Vancouver	2023-05-24	2024-04-30	2024-07-31	
Main class hull renewal	Class	Shanghai FiS	2019-08-15	2024-04-30	2024-07-31	
Main class hull intermediate	Class	Auckland	2022-05-21	2026-04-30	2027-10-31	
Bottom complete survey	Class	Singapore	2021-10-31	2024-07-31	2024-07-31	
Propeller shaft (tailshaft) arrangement, oil lubricated	Class	Fujairah	2017-06-10			
Propeller connection keyless, flanged or clamped	Class	Tongyeong	2014-07-31	2028-10-31	2030-01-31	
Tailshaft monitoring annual	Class	Vancouver	2023-05-24	2024-04-30	2024-07-31	
Auxiliary boiler complete	Class	Singapore	2021-10-31	2024-07-31	2024-07-31	
Auxiliary boiler complete	Class	Singapore	2021-10-31	2024-07-31	2024-07-31	
Clean complete	Class	Shanghai FiS	2019-08-15	2023-10-31	2024-07-31	
Clean annual	Class	Vancouver	2023-05-24	2024-04-30	2024-07-31	
Periodically unattended machinery space complete	Class	Shanghai FiS	2019-08-15	2023-10-31	2024-07-31	

- In addition, merchant vessels older than 15 years must also be inspected for breaches or defaults twice every five years with the period for passenger ships being every two years.

- A Dry Dock's primary goal is to perform effective repairs and maintenance on ship parts that are constantly in contact with marine water and therefore are not visible unless the water is flushed out.

- Drydocking is the process of removing a ship from the water to enable work to be performed on the exterior part of the ship below the waterline.

- Master shall pay attention to the value of GM in the Docking Condition. It is very important that the vessel has sufficient positive GM and required trim before she docks. The blocks (normally made of reinforced concrete having wood padding on top) are arranged throughout the dock prior arrival of the vessel to the dock. The position of blocks is determined keeping in mind the length / breadth of the vessel and also the position of Bottom plugs and Doppler/EM Log and Echo sounder sensor.

- Usually, the dock is full with water when the vessel enters it and once inside, the pumping out is commenced.

- Continuous monitoring is done by the Docking Master with respect to vessel's position as the water level in the dock falls. The vessel usually needs to be in the centerline of the dry dock so that complete keel rests firmly on the blocks. To ensure this, the rate of pumping is reduced when the stern is about to touch the blocks. Forward and aft mooring lines are passed from the vessel to the shore. To keep the vessel aligned with the centerline of the dock normally a Leica theodolite is used. Theodolite is a surveying equipment which is widely used to measure the horizontal and vertical angles. You must have seen the instrument especially during road / building / bridge construction by civil engineer.

- Normally, the stern touches the blocks first. When the ship's stern touches the keel blocks, this contact creates a Normal Reaction or Upthrust. The value of this Normal Reaction force or upthrust increases as the water level further reduces in the dock. This results is sudden reduction in the value of GM which is the measure of the vessel's stability.

- And if, at this time, the vessel doesn't have sufficient positive GM, the sudden reduction in the GM may result in negative GM which may result in the vessel to capsize.

- Over here it is important to define what is Critical Period.

- What is Critical Period and why it is called 'critical' ?

- A Critical Period is the interval of time from, when the stern of the vessel touches the blocks to the time when the entire weight of the vessel is borne by the blocks (i.e. the vessel sits completely on blocks). This period is very crucial and continuous monitoring is required.

- The word 'critical' means something which has the potential to cause a disaster. So, it is logical as to why the critical period is 'critical.

- Also, vessel shall keep minimum required trim so that the critical period is reduced to minimum.

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2. GETTING READY FOR DOCKING

- Mechanical Repairs
- Main & Aux. Engine Works
- Propulsion System Works
- Electrical/Electronic & Automation Systems
- Steel Works
- Piping & Outfitting
- Repairs and calibration for tank radar systems
- Cleaning
- Surface Treatment & Painting
- HVAC-R Applications
- Riding Teams
- O&M, 2nd hand Eqmnt. Supply
- Arrangement & co-ordination of LSA/FFA services,
- Underwater inspection,
- GMDSS/Radio surveys, Navigational equipment services, NDT & UTM.

- Technical Management
- Whole Docking Management
- Arrangement of berths and repair facilities
- Contractual Assisting
- Quality Control
- Schedule Control
- Document Control and Reporting
- Cost Control and Analysis
- Technical Purchasing Assistance
- Commissioning of various electrical systems
- Consultancy on Marine Rules and regulations

3. SHIPYARD SELECTION

- Type and size of the vessel
- Scope of work
- Availability resources
- Regulatory requirements
- Environmental conditions

Strategies for Optimizing Dry-Docking Durations

- Implementing proactive maintenance schedules
- Efficient Project planning and scheduling
- Leveraging technology and innovation
- Collaboration and communication

- **Pre-docking Preparation -** The process of dry docking of a ship needs to be planned meticulously. Days before a ship is to be dry docked, the dock master will prepare a docking plan, taking into consideration all the minute details of the structure of the ship, i.e. hull structure of the ship, locations of the drain plugs, and echo sounders beneath the ship so as to not damage them during docking the ship.
- **Preparing a Docking Plan -** The process of dry docking of a ship needs to be carefully planned to be executed with ease. Dock Masters and designers take aid of a series of sketches and detailed calculations about the ship's height, weight, and structure. The docking plan explains how to successfully dock the ship and also how to easily undock it. It also reduces the risk of a ship capsizing during undocking.

- **Thickness Gauging -** The construction of the vessel hull needs to be carefully scrutinised for damages since it is in constant contact with the sea water. Even if the hull is not visibly damaged, its thickness must be tested to avoid any mishaps.
- **Destructive & Non-Destructive Testing -** Destructive testing involves breaking down or damaging certain parts of the ship just to test their strength. It involves rebuilding the same part to endure more damage and be more durable.
- **High Pressure Washing -** This method is used to clean the ship's hull of bio foul and dirt that have collected on the hull over time. The presence of algae and other bio foul on the surface of the hull increases its corrosion. It is important that the hull be cleaned and high-pressure washing is the most efficient way to do this. High-pressure washing involves the removal of the fouling with the help of manual gun systems and high-pressure water jets. They also make use of rotating nozzles to clean large areas of the hull.

- **Underwater Repair & Diving -** Underwater repair deals with the inspection and repair of the ship while it is in the sea. A number of companies who offer these services specialise in examining the ship's surface for flaws that can only be seen in water. They make use of advance machinery, such as underwater welding, to repair damaged propellers while the ship is in the water.
- **Blasting & Hull Painting -** Blasting is the protective layer put on the hull to make it ready for the application of paint. It gives a good profile to the metal before it is painted. A good layer of paint minimises the corrosion of the ship's hull.

- **Anchor & Chain Servicing -** The chains and anchor on a ship are mostly used to stabilize it during times of rough weather. Over time, the anchor and chain which are mostly made of iron start to rust and erode. Hence it is necessary for the anchor and chain to be replaced or maintained regularly.
- **Robotic Scanning -** Inspecting a ship manually can be tedious at times. Thanks to the rapid development of technology, the inspection of an entire ship can be done quickly and more thoroughly with the help of robots. Robots have been developed to scan ships for inaccuracies, abnormalities and other faults. Such type of quick detection reduces the time needed to repair such damages.
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3. DRY-DOCKING OPERATIONS


IMO 9491604

4. SEA TRIAL AND LEAVING

- Budget and Invoicing Check With Shipyard
- Certifications
- Drydocking Booklet/Report
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•Certifications

Code	Certificate	Type	Term	Issued	Expires	Ext until
CLCE	Classification Certificate	Class	Full	2024-04-26	2024-07-31	
ILLC-IC	International Load Line Certificate	Statutory	Full	2021-05-11	2024-07-31	
CCC-IC	Cargo Ship Safety Construction Certificate (International)	Statutory	Full	2021-05-11	2024-07-31	
CEC-IC	Cargo Ship Safety Equipment Certificate (International)	Statutory	Full	2021-05-11	2024-07-31	
CRC-IC	Cargo Ship Safety Radio Certificate (International)	Statutory	Full	2021-05-11	2024-07-31	
POLAR-IC	Polar Ship Certificate	Statutory	Full	2022-11-10	2024-07-31	
SMC	Safety Management Certificate	Statutory	Full	2021-05-11	2025-11-18	
ISPS-IC	International Ship Security Certificate	Statutory	Full	2021-05-11	2025-11-18	
MLC-IC	Maritime Labour Certificate (International)	Statutory	Full	2021-05-11	2025-11-18	
MLC-T3-C	Maritime Labour Convention Title 3 Reg 3.1 Certificate	Statutory	Full	2021-05-11		
OPP-B-IC	International Oil Pollution Prevention Certificate, Type B	Statutory	Full	2021-05-11	2024-07-31	
SPP-IC	International Sewage Pollution Prevention Certificate	Statutory	Full	2021-05-11	2024-07-31	
IAPP-IC	International Air Pollution Prevention Certificate	Statutory	Full	2020-05-03	2024-07-31	
EEC-IC	International Energy Efficiency Certificate	Statutory	Full	2023-05-24		
AFS-IC	International Anti-Fouling System Certificate	Statutory	Full	2021-05-11		
BWM-T-IC	International Ballast Water Management Certificates-treatment method	Statutory	Full	2023-09-21	2024-07-31	
REC-IHM-C	Inventory of Hazardous Materials Certificate	Statutory	Full	2022-10-07	2024-07-31	
ICCP-IC	International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk	Statutory	Full	2021-05-11	2024-07-31	
ILO152-SoC	Register of Lifting Appliances and Cargo Handling Gear	Statement Of Compliance	Full	2022-10-07		
EU-REC-IHM-C	Inventory of Hazardous Materials Certificate (EU regulation)	Statutory	Full	2022-10-07	2024-07-31	
TMC-IC	International Tonnage Certificate (1969)	Statutory	Full	2019-12-20		
TMCP-SoC	Panama Canal (PC/UMS) Documentation of Total Volume	Statement Of Compliance	Full	2019-12-20		
TMCS-SoC	Suez Canal Special Tonnage Certificate	Statement Of Compliance	Full	2019-12-20		

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