

# Maintaining oil tankers and meeting dry dock requirements

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*Maintaining oil tankers and meeting dry dock requirements are crucial for safety, regulatory compliance, environmental protection, and operational efficiency. Here's a breakdown of what's involved...*

# Oil Tanker Maintenance Overview

Oil tankers are subject to rigorous inspection and maintenance programs due to the high risk they pose if something goes wrong. Maintenance can be grouped into the following categories:

## Routine Maintenance (Onboard / At Sea):

- **Hull Inspection & Cleaning:** Regular inspections for corrosion, fouling, and damage.
- **Engine & Machinery Maintenance:** Regular checks, oil changes, and replacement of worn parts.
- **Piping & Valves:** Ensure integrity and functionality of cargo pipelines and valves.
- **Cargo System Checks:** Inert gas systems, cargo pumps, and vapor recovery systems must be maintained.
- **Safety Equipment:** Life-saving appliances, fire suppression systems, and gas detection equipment are tested frequently.
- **Coatings & Cathodic Protection:** Maintaining anti-corrosion coatings and anodes to prolong hull life.

## Planned Maintenance System (PMS):

Most tankers operate under a PMS (Planned Maintenance System), often aligned with **Class Society** requirements (like DNV, ABS, LR).

- Tracks components, schedules maintenance, and logs inspections.
- Often mandatory for compliance with **IMO** and **ISM Code**.

## Dry Dock Requirements:

Dry docking is a mandatory periodic procedure for thorough inspections, maintenance, and repairs that cannot be performed while the vessel is afloat.

## Frequency

As per **IMO** and **Classification Society** rules:

- **Every 5 years:** Mandatory dry docking.

- **Intermediate survey:** Every 2.5 years (can sometimes be done afloat).
- **Special Survey:** Every 5 years, requiring dry dock (or underwater examination for certain items).
- **Annual surveys:** May not require docking, but include checks on structure, machinery, etc.

### Typical Dry Dock Work Scope:

#### Hull Work

- Cleaning, blasting, and repainting.
- Ultrasonic thickness measurement.
- Hull structure inspection (including internal tanks).

#### Propulsion and Steering

- Propeller and rudder removal/inspection.
- Stern tube seals and bearings.
- Thruster servicing (if equipped).

#### Cargo Systems

- Inspection and testing of cargo tanks.
- Cargo lines pressure testing and cleaning.
- Inert gas system inspection.

#### Safety Equipment

- Lifeboats and davits overhaul.
- Firefighting systems tested and certified.

#### Environmental Compliance

- Ballast Water Treatment System (BWTS) servicing.
- MARPOL compliance checks (e.g. oil discharge monitoring systems).

## Regulatory & Certification Requirements:

Area	Authority	Requirement
<b>Hull &amp; Machinery</b>	Classification Society (e.g., DNV, LR)	Periodic surveys and certifications
<b>Safety &amp; Pollution</b>	Flag State, IMO	ISM Code, SOLAS, MARPOL compliance
<b>Dry Docking</b>	Class + Flag State	Must meet schedule or risk suspension of certification
<b>Port State Control (PSC)</b>	Coastal States	Can detain ships for non-compliance

## Documentation & Records:

**Tankers must maintain:**

- Dry dock reports
- Survey reports (annual, intermediate, special)
- Maintenance logs (PMS)
- Certificates (Load line, Safety Construction, ISM, IOPP, etc.)

## Tips for Efficient Dry Docking:

- **Plan well in advance** (6-12 months).
- **Select a reputable yard** with tanker experience.
- **Pre-order spare parts** and anticipate delays.
- **Coordinate with class surveyors** early.
- **Use docking time to upgrade systems** (e.g., energy efficiency retrofits).

Below is a **sample maintenance schedule** and a **dry dock checklist** tailored for **oil tankers**, following industry best practices and regulatory standards (IMO, Class, ISM):

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### Oil Tanker – Sample Maintenance Schedule (Monthly to 5-Year):

Frequency	Task	System / Area	Responsible
Daily	Engine and generator readings	Machinery	Engine Room Staff
	Check bilge, ballast, and pump room for leaks	Hull/Structure	Deck Crew
Weekly	Lifeboat/rescue boat checks	Safety	Safety Officer
	Test fire alarm systems	Safety	Electrician
	Check cargo pump system	Cargo	Cargo Officer
Monthly	Clean fuel/oil purifiers	Machinery	Engine Dept
	Inspect tank pressure relief valves	Cargo	Deck Officer
	Grease rudder & steering gear	Steering	Engine Dept
Quarterly	Inspect ballast tanks for corrosion/water ingress	Hull	Chief Officer
	Calibrate gas detectors and sensors	Safety	Safety Officer
	PMS update and review	All	Chief Engineer
Annually	Load line survey	Hull	Class Surveyor
	IOPP & Safety Equipment Certificate Renewal	Compliance	Flag/Class
	Oil discharge monitoring system (ODME) test	Pollution	3rd Party

Frequency	Task	System / Area	Responsible
Every Years	2.5 Intermediate Class Survey	Hull, Cargo, Machinery	Class Surveyor
	Underwater survey (if afloat)	Hull	UW Contractor
Every Years	5 Special Survey / Dry Dock	All systems	Shipyard + Class

## Dry Dock Checklist for Oil Tankers:

### A. Pre-Docking Preparation

- Confirm dry dock slot and dates
- Notify Flag, Class, and P&I Club
- Pre-inspection with senior officers and superintendent
- Compile list of planned work and repairs
- Order spares and materials in advance
- Arrange logistics for crew during docking

### B. Hull & Structural Work

- High-pressure washing of hull
- Grit blasting and re-coating (anti-fouling/anti-corrosion)
- Hull thickness measurements (UTM)
- Visual inspection of tanks and void spaces
- Steel renewals (if required)

### C. Propulsion & Steering Gear

- Propeller and shaft inspection
- Rudder clearance and bearing checks
- Overhaul of stern tube seals
- Thruster (bow/stern) maintenance

#### **D. Cargo and Ballast Systems**

- Inspection of cargo tanks (coating, cracks, corrosion)
- Pressure testing of cargo lines
- Inert gas system servicing
- Ballast Water Treatment System check

#### **E. Safety and Regulatory Equipment**

- Lifeboats and davit load test
- Fire detection and suppression system inspection
- Gas detectors calibration
- Emergency shutdown systems tested
- Class surveys (Annual/Intermediate/Special)

#### **F. Machinery & Auxiliary Systems**

- Main engine overhaul (if due)
- Generator, purifier, and boiler servicing
- Air compressors, pumps, and coolers checked
- Electrical switchboard testing

#### **G. Post-Docking**

- Sea trials and engine tests
- Confirm completion of Class recommendations
- Update PMS and maintenance logs
- Renew Class and statutory certificates
- Submit docking report to office & Flag