



Predictive Maintenance Checklist for Cargo Ships Using IoT

Marine Inspection Checklist | <https://marineinspection.app/>

Inspector Name		Date		Signature	
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IoT Sensors & Data Integrity

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	IoT sensors operational and online		■	■	■	■
2	Sensor data transmission stable		■	■	■	■
3	No data gaps or anomalies detected		■	■	■	■
4	Sensor calibration up to date		■	■	■	■
5	Cybersecurity protections enabled		■	■	■	■

Main Engine Condition Monitoring

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Engine vibration within thresholds		■	■	■	■
2	Lubricating oil condition normal		■	■	■	■
3	Exhaust temperature trends acceptable		■	■	■	■
4	Fuel injection performance normal		■	■	■	■
5	Early fault indicators reviewed		■	■	■	■

Auxiliary Machinery Monitoring

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Pumps condition trends normal		■	■	■	■
2	Compressors vibration levels acceptable		■	■	■	■
3	Heat exchangers performance stable		■	■	■	■
4	Auxiliary engine parameters normal		■	■	■	■
5	Predictive alerts reviewed		■	■	■	■

Electrical & Power System Analytics

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Generator load balance optimal		■	■	■	■
2	Power quality within limits		■	■	■	■
3	Battery health indicators normal		■	■	■	■
4	Electrical fault predictions reviewed		■	■	■	■
5	UPS and backup systems monitored		■	■	■	■

Hull & Structural Health Monitoring

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Hull stress sensor data normal		■	■	■	■
2	Corrosion monitoring readings acceptable		■	■	■	■
3	Vibration levels within design limits		■	■	■	■
4	Structural anomaly alerts reviewed		■	■	■	■
5	Data trends archived for analysis		■	■	■	■

Fuel Efficiency & Emissions Monitoring

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Fuel consumption trends optimized		■	■	■	■
2	Emission sensor readings compliant		■	■	■	■
3	Engine tuning recommendations reviewed		■	■	■	■
4	Energy efficiency KPIs monitored		■	■	■	■
5	Emission alerts addressed		■	■	■	■

Alerts, Analytics & Maintenance Actions

SN	Inspection Item	Note	Good	Repair	Replace	NA
1	Predictive alerts prioritized correctly		■	■	■	■
2	Maintenance actions generated from analytics		■	■	■	■
3	Work orders created proactively		■	■	■	■
4	Maintenance effectiveness reviewed		■	■	■	■
5	Analytics models updated		■	■	■	■