IDWAL

TECHNICAL GUIDE

Documents

Idwal 2022

IDWAL TECHNICAL GUIDE

Contents

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Documents

Cargo Ship Safety Construction Certificate (CCSC)

As per SOLAS Chapter 1 Regulation 10 and 12, Cargo ships of 500 gross tons or more on international voyages should have a Cargo Ship Safety Construction Certificate which proves that the vessel has been surveyed and found compliant with the applicable provisions of SOLAS Chapter II-1 and II-2. Surveys for the renewal of the Safety Construction Certificate includes verification that the following items comply with the relevant provisions and requirements laid down within the SOLAS Convention as amended:

1. Structure
2. Boilers and Other Pressure Vessels.
3. Main and auxiliary machinery including steering gear and associated control systems, electrical installation and other equipment.
4. In the case of tankers, the pump-rooms, cargo, bunker and ventilation piping systems and associated safety devices.
5. Required stability information is provided.

When an Initial survey and the subsequent 5-yearly Renewal surveys have confirmed that all of these are in a satisfactory condition and are fit for the service for which the ship is intended, a Cargo Ship Safety Construction Certificate will be issued by a vessel's Flag State or a Recognised Organization such as a Classification Society. The Cargo Ship Safety Construction Certificate is subject to an annual survey (+/- 3 months of each anniversary date) and an Intermediate survey (+/- 3 months from the 2nd or 3rd anniversary date) to confirm continued compliance with the applicable regulations. A minimum of two inspections of the outside of the ship's bottom during any five-year period is required as part of the Cargo Ship Safety Construction Certificate verification process, with the interval between any two such inspections not exceeding 36 months. The dates of the last bottom survey will be stated on the front of the certificate.

A surveyor should check that the original Cargo Safety Construction Certificate on board a vessel is valid with no overdue surveys. A short-term Cargo Safety Construction Certificate may be issued due to a known defect for which a Condition or dispensation has been issued. If a short-term certificate is issued, the reason for the short-term certificate should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. Cargo Ship Safety Construction Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognized Organisation. Any relevant exemptions should be highlighted within the inspection checklist.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

The Cargo Safety Construction Certificate is useful for a surveyor because information can be taken from it. This includes delivery date of the vessel and Class survey dates including bottom and intermediate survey dates including but not limited to delivery date of the vessel as well as Class survey dates such as bottom and intermediate survey dates. Class survey dates are often stamped and signed on the attached supplement.

To get a copy of the Cargo Ship Safety Construction Certificate during the inspection, the Master will often have a folder of electronic PDF versions of Class issued Certificates on a computer. This then can be provided by the Master to the attending surveyor by means of an email attachment. If however, this is not the case, there will likely be a hard copy certificate in an issued Class Certificates folder, often kept within the Master's office. The hard copy can be scanned by mobile or other similar device using applications such as CamScanner or PDF Scanner.

DNV·GL

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

Certificate No: n1516899-vbz
DNV GL Id No: G116497
Date of issue: 2020-11-03

Issued under the provisions of the INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, as modified by the Protocol of 1988 relating thereto
under the authority of the Government of

THE HONG KONG SPECIAL ADMINISTRATIVE REGION OF THE PEOPLE'S REPUBLIC OF CHINA

by DNV GL

Particulars of Ship

Name of Ship:	[redacted]
Distinctive Number or Letters:	[redacted]
Port of Registry:	HONG KONG
Gross Tonnage:	[redacted]
Deadweight of ship (metric tons) [1]:	-
IMO Number:	[redacted]

Type of Ship:[2]

- [ ] Bulk carrier
- [ ] Oil tanker
- [ ] Chemical tanker
- [ ] Gas carrier
- [x] Cargo ship other than any of the above

Date of Build[3]

Date of building contract:	2010-09-20
Date on which keel was laid or ship was at a similar stage of construction:	2012-09-10
Date of delivery:	2013-10-14
Date on which work for a conversion or an alteration or modification of a major character was commenced (where applicable):	-

**Please find above a redacted example of a Cargo Ship Safety Construction Certificate issued by DNV*

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Class Certificate

Classification societies certify that the construction of a vessel complies with relevant standards and they carry out regular surveys in service to ensure compliance with the standards. A vessel is not required to be Classed though compliance with Class rules is required for obtaining insurance, P&I cover, and is usually a minimum requirement for a vessel to be sold, obtain finance, gain charters and be considered for international commercial trading.

A certificate of Class states that a vessel is in compliance with the Rules of the classification society and does not act as a warrant of safety, fitness for purpose or seaworthiness. However, More than 90% of the world's cargo carrying tonnage is covered by the classification of the twelve Member Societies of IACS, The International Association of Classification. If a vessel is not Classed then it will be considered high risk for most commercial transactions.

It is very important that a vessel is confirmed to be in Class and that there are no overdue surveys/ active Class suspensions. Many commercial transactions will also specify that a vessel is Classed with an IACS member society. A surveyor should check that the original Class Certificate on board a vessel is valid with no overdue surveys. A short-term Class Certificate may be issued due to a known defect for which a Condition of Class has been issued. If a short-term certificate is issued, the reasons why should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. The Class status report will contain more detail regarding the vessel's Class status and any open pertinent Conditions or Memos will be listed.

The Class certificate will contain useful information including the vessel's Class Notations which can be used to confirm many items from the IDWAL inspection checklist. The Class certificate will also contain the last Class survey dates which can be used to fill up the survey table in the inspection checklist.

BUREAU VERITAS

INTERNATIONAL CLASSIFICATION SOCIETY

CERTIFICATE OF CLASSIFICATION

[redacted]

Ship's Name [redacted] Register N° [redacted]

Flag [redacted] Port of Registry [redacted]

Owners [redacted]

This is to certify that the above named ship has been entered in the Bureau Veritas Register Book with the following classification symbols and notations

I ✠ HULL ✠ MACH

Liquefied gas carrier

Unrestricted navigation

✠ AUT-UMS , MON-SHAFT , IG

This certificate is issued within the scope of Bureau Veritas Marine & Offshore General Conditions.

At Singapore on [redacted]

Limit date of validity [redacted]

The hull of the ship is surveyed under normal survey system.
The machinery of the ship is surveyed under normal survey system.

[redacted] Signature and stamp

By Order of the Secretary

A typical Bureau Veritas Class certificate, Note the UMS notation for unmanned machinery spaces.

Ship [redacted]

IMO Nr [redacted]

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

The endorsements refer to the completion of periodical surveys only.

Annual survey 1 (from 30-Mar-2020 to 30-Sep-2020)
Completed at: SINGAPORE
on: [redacted]
by: [redacted]
Name, Signature and stamp

Annual survey 2 (from 30-Mar-2021 to 30-Sep-2021)
Completed at: SINGAPORE
on: [redacted]
by: [redacted]
Name, Signature and stamp

Intermediate survey (from 30-Mar-2021 to 30-Sep-2022)
Completed at:
on:
by:
Name, Signature and stamp

Annual survey 3 (from 30-Mar-2022 to 30-Sep-2022)
Completed at:
on:
by:
Name, Signature and stamp

Annual survey 4 (from 30-Mar-2023 to 30-Sep-2023)
Completed at:
on:
by:
Name, Signature and stamp

As can be seen Class annual and intermediate dates can often be found on the 2nd page.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Anti-Fouling Certificate

Issued for compliance with the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001. Organotin compounds that act as biocides are prohibited under this convention and cannot be applied or reapplied to a vessel. A barrier coating to prevent leaching of this coating is an acceptable alternative. The certificate is issued by the authority of the member state and are surveyed to prove that they comply with the provisions laid out in the convention.

This certificate can be used to find the name of anti-fouling coating applied for the hull section of the inspection checklist.

APPENDIX 1 TO ANNEX 4

MODEL FORM OF INTERNATIONAL ANTI-FOULING SYSTEM CERTIFICATE

INTERNATIONAL ANTI-FOULING SYSTEM CERTIFICATE
(This certificate shall be supplemented by a Record of Anti-fouling Systems)

(Official seal) *(State)*

Issued under the
International Convention on the Control of Harmful Anti-Fouling Systems on Ships

under the authority of the Government of

.....
(name of the State)

by

.....
(person or organization authorized)

When a Certificate has been previously issued, this Certificate replaces the certificate dated .....

Particulars of ship[1]

Name of ship .....

Distinctive number or letters .....

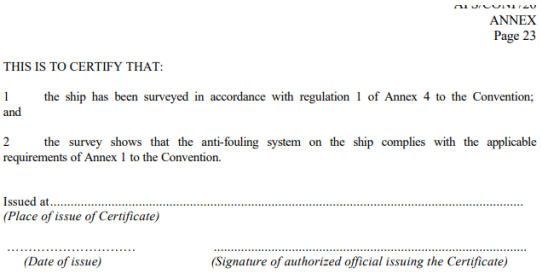
Port of registry .....

Gross tonnage .....

IMO number[2] .....

An anti-fouling system controlled under Annex 1 has not been applied during or after construction of this ship .....
An anti-fouling system controlled under Annex 1 has been applied on this ship previously, but has been removed by ..... *(insert name of the facility)* on .... *(date)* .....
An anti-fouling system controlled under Annex 1 has been applied on this ship previously, but has been covered with a sealer coat applied by ..... *(insert name of the facility)* .....on.....*(date)*.....
An anti-fouling system controlled under Annex 1 was applied on this ship prior to.... *(date)*[3], but must be removed or covered with a sealer coat prior to .....*(date)*[4].....

Model form as found in the convention.



ANNEX
Page 23

THIS IS TO CERTIFY THAT:

1 the ship has been surveyed in accordance with regulation 1 of Annex 4 to the Convention; and

2 the survey shows that the anti-fouling system on the ship complies with the applicable requirements of Annex 1 to the Convention.

Issued at.....
(Place of issue of Certificate)

....
(Date of issue) *(Signature of authorized official issuing the Certificate)*

Date of completion of the survey
on which this certificate is issued: .....

Model form as found in the convention.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

Ballast Water Management (IBWM) Certificate

All ships of 400 gross tonnage and above to which the BWM Convention applies (including existing ships, except floating platform, FSUs and FPSOs) are required to carry an International Ballast Water Management Certificate. The BWM Convention applies to all ships with ballast water capacity and active in international trade, except ships mentioned in Article 3:

- Ships which are not designed or constructed to carry ballast water.
- Ships that only operate in the local waters of a single authority (party), or in local waters of a single authority and on the high seas.
- War ships, naval auxiliary, or other ships owned and operated by a state and used only on government non-commercial service, as stated in Article 3.2(d) of the convention.
- Ships with permanent ballast water in sealed tanks that is not subject to discharge. e.g. For ships operating usually only in local waters, single international voyages may be granted an exemption under regulation A-4 by following the IMO guidance circular BWM.2/Circ.52/Rev.1. The countries of origin and destination must be approached for consent to the single voyage

For the certificate to be a valid, the following surveys are required:

- An initial survey before the ship is put in to service or before the Certificate is issued for the first time is required.
- An intermediate survey at the second anniversary or the third anniversary. This survey can be carried out between three months before and three months after the anniversary date.
- An annual survey within three months before or after each Anniversary date
- An additional survey either general or partial, after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material necessary to achieve full compliance with this Convention.

The BWM certificate will include:

- The particulars of the vessel
- Ballast information (Details of Ballast Water Management Method(s) used; The name of the manufacturer (if Ballast Water Treatment System is fitted) and the principal Ballast Water Management method employed (D-1, D-2 or D-4))
- Validity dates. Date issued and survey dates.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

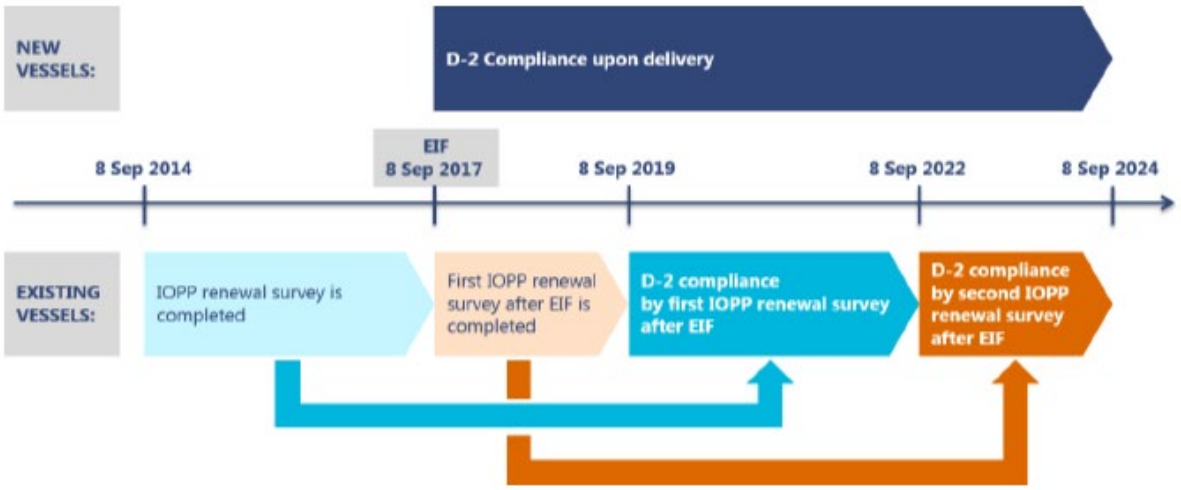
Methods of Ballast Water Management

Regulation D-1 Ballast Water Exchange Standard: Ships performing ballast water exchange shall do so with an efficiency of 95% volumetric exchange of ballast water. For ships exchanging ballast water by the pumping-through method, pumping through three times the volume of each ballast water tank shall be considered to meet the standard described. Pumping through less than three times the volume may be accepted provided the ship can demonstrate that at least 95% volumetric exchange is met.

Regulation D-2 Ballast Water Performance Standard (Ballast Water Treatment System): Ships conducting ballast water management shall discharge less than 10 viable organisms per m3 greater than or equal to 50 micrometres in minimum dimension and less than 10 viable organisms per millilitre less than 50 micrometres in minimum dimension and greater than or equal to 10 micrometres in minimum dimension; and discharge of the indicator microbes shall not exceed the specified concentrations.

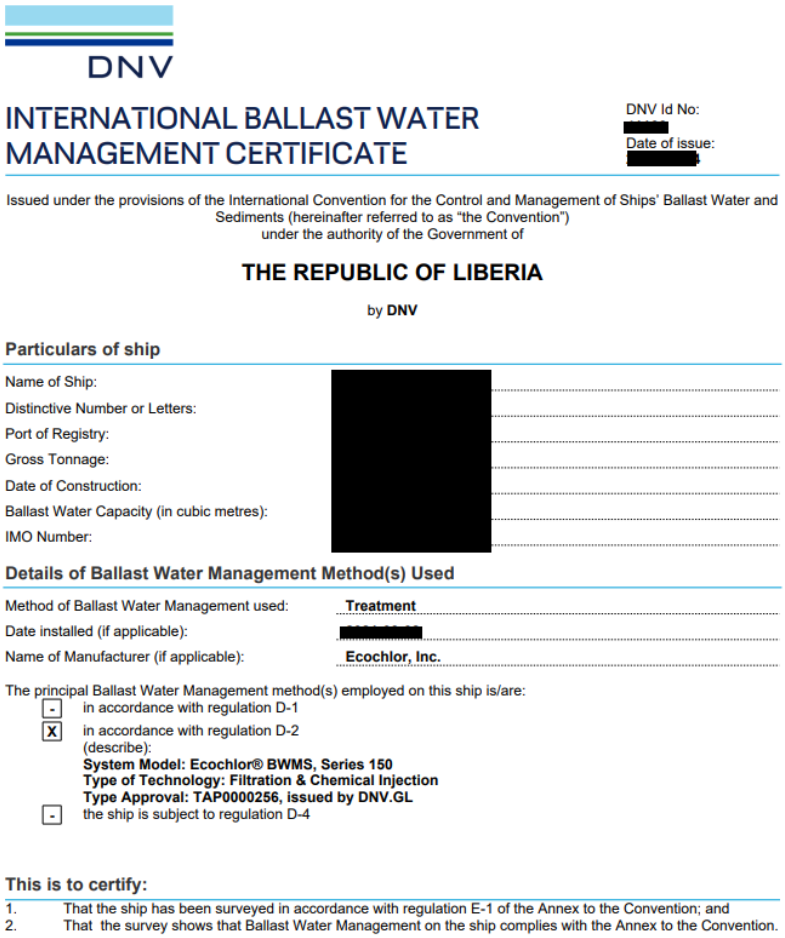
Regulation D-4 Prototype technologies: It allows for ships participating in a programme approved by the Administration to test and evaluate promising Ballast Water treatment technologies to have a leeway of five years before having to comply with the requirements.

The Certificate provides pertinent information for an Idwal inspection. The method of Ballast Water Management / Treatment will be stated so it is possible to confirm if a ship is fitted with a Ballast Water Treatment System and the type of system fitted. The below diagram shows the implementation schedule for the D-2 standards (Ballast Water Treatment System needs to be installed):



☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

A surveyor should check that the IBWM Certificate on board a vessel is valid with no overdue surveys. A short-term IBWM Certificate may be issued due to a known defect for which a Condition or dispensation has been issued (e.g. Ballast Water Treatment System temporarily not operational). If a short-term certificate is issued, the reason why should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. IBWM Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognised Organization. Any exemptions should be highlighted within the inspection checklist.



DNV

INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

DNV Id No: [redacted]
Date of issue: [redacted]

Issued under the provisions of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (hereinafter referred to as "the Convention")
under the authority of the Government of

THE REPUBLIC OF LIBERIA

by **DNV**

Particulars of ship

Name of Ship: [redacted]
Distinctive Number or Letters:
Port of Registry:
Gross Tonnage:
Date of Construction:
Ballast Water Capacity (in cubic metres):
IMO Number:

Details of Ballast Water Management Method(s) Used

Method of Ballast Water Management used: **Treatment**
Date installed (if applicable): [redacted]
Name of Manufacturer (if applicable): **Ecochlor, Inc.**

The principal Ballast Water Management method(s) employed on this ship is/are:

[-] in accordance with regulation D-1
[X] in accordance with regulation D-2
(describe):
System Model: Ecochlor® BWMS, Series 150
Type of Technology: Filtration & Chemical Injection
Type Approval: TAP0000256, issued by DNV.GL
[-] the ship is subject to regulation D-4

This is to certify:

1. That the ship has been surveyed in accordance with regulation E-1 of the Annex to the Convention; and
2. That the survey shows that Ballast Water Management on the ship complies with the Annex to the Convention.

IBWM cert issued by DNV, note the name and type of the BWTS are listed

Cargo Ship Safety Equipment Certificate (CSSE) and Form E

As per SOLAS Chapter 1 Regulation 8, Cargo ships of 500 gross tons or more on international voyages should have a Cargo Ship Safety Equipment Certificate which proves that the vessel has been surveyed and found compliant with the applicable provisions of SOLAS Chapter II-1, II-2, III and V . Surveys for the renewal of the Safety Equipment Certificate includes verification that the following items comply with the relevant provisions and requirements laid down within the SOLAS Convention as amended:

1. Fire Safety Systems and Appliances
2. Life-Saving Appliances and Arrangements except radio installations
3. The Shipborne Navigational Equipment
4. Means of embarkation for pilots and other equipment
5. The fire control plans, nautical publications, lights, shapes, means of making sound signals and distress signals ensuring that they comply with the requirements of the present regulations and, where applicable, the International Regulations for Preventing Collisions at Sea

When an Initial survey and the subsequent 5-yearly Renewal surveys have confirmed that all of these are in a satisfactory condition and are fit for the service for which the ship is intended, a Cargo Ship Safety Equipment Certificate will be issued by a vessel's Flag State or a Recognised Organization such as a Classification Society. The Cargo Ship Safety Equipment Certificate is subject to an annual survey (+/- 3 months of each anniversary date) and an Intermediate survey (+/- 3 months from the 2nd or 3rd anniversary date) to confirm continued compliance with the applicable regulations.

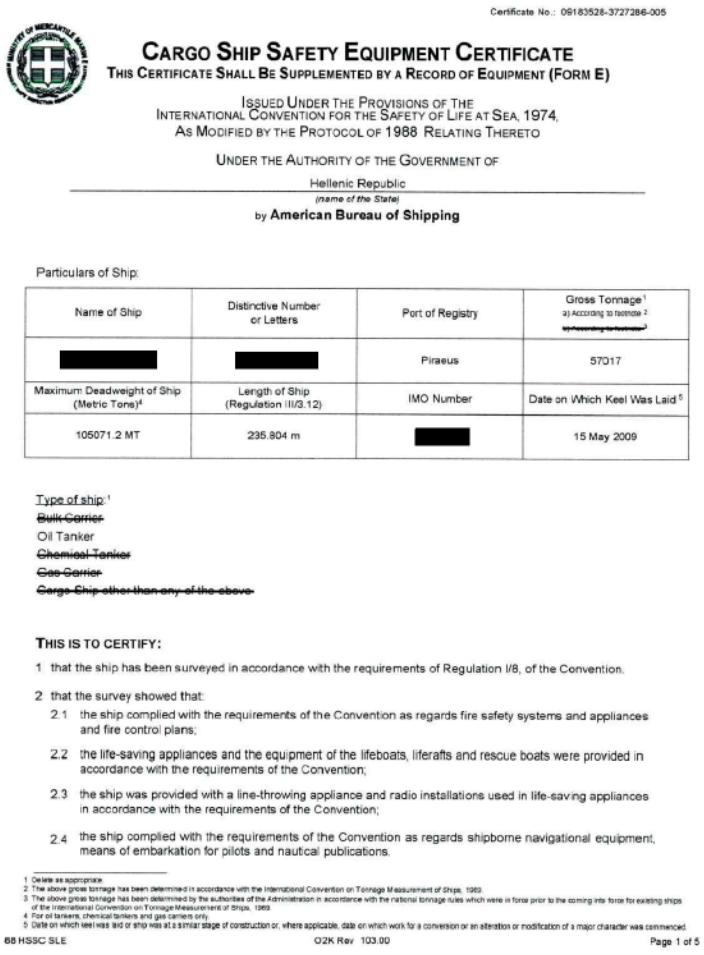
A surveyor should check that the original Cargo Safety Equipment Certificate is valid with no overdue surveys. A short-term Cargo Safety Equipment Certificate may be issued due to a known defect for which a Condition or dispensation has been issued. If a short-term certificate is issued, the reason for this should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. Cargo Ship Safety Equipment Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognised Organisation. Any relevant exemptions should be highlighted within the inspection checklist.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Form E

Form E forms part of the Cargo Ship Safety Equipment Certificate and includes a lot of useful information such as navigational equipment on board and lifesaving appliances carried on board the vessel.

Concerning the retrieval of a copy of the Cargo Ship Safety Equipment Certificate & Form E Supplement during the inspection, the Master will often have a folder of electronic PDF versions of Class issued Certificates on a computer. This then can be provided by the Master to the attending surveyor by means of an email attachment. If however, this is not the case, there will likely be a hard copy certificate in an issued Class Certificates folder, often kept within the Master's office. The hard copy can be scanned by mobile or other similar device using applications such as CamScanner or PDF Scanner.



Certificate No.: 09183528-3727286-005

CARGO SHIP SAFETY EQUIPMENT CERTIFICATE

THIS CERTIFICATE SHALL BE SUPPLEMENTED BY A RECORD OF EQUIPMENT (FORM E)

ISSUED UNDER THE PROVISIONS OF THE
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974,
AS MODIFIED BY THE PROTOCOL OF 1988 RELATING THERETO

UNDER THE AUTHORITY OF THE GOVERNMENT OF

Hellenic Republic
(name of the State)

by **American Bureau of Shipping**

Particulars of Ship:

Name of Ship	Distinctive Number or Letters	Port of Registry	Gross Tonnage[1] a) According to regulation [2] [redacted][3]
[redacted]	[redacted]	Piraeus	57017
Maximum Deadweight of Ship (Metric Tons)[4]	Length of Ship (Regulation II/3.12)	IMO Number	Date on Which Keel Was Laid[5]
105071.2 MT	235.804 m	[redacted]	15 May 2009

Type of ship:[1]
~~Bulk Carrier~~
Oil Tanker
~~Chemical Tanker~~
~~Gas Carrier~~
~~Cargo Ship other than any of the above~~

THIS IS TO CERTIFY:

1 that the ship has been surveyed in accordance with the requirements of Regulation I/8, of the Convention.

2 that the survey showed that:

2.1 the ship complied with the requirements of the Convention as regards fire safety systems and appliances and fire control plans;

2.2 the life-saving appliances and the equipment of the lifeboats, liferafts and rescue boats were provided in accordance with the requirements of the Convention;

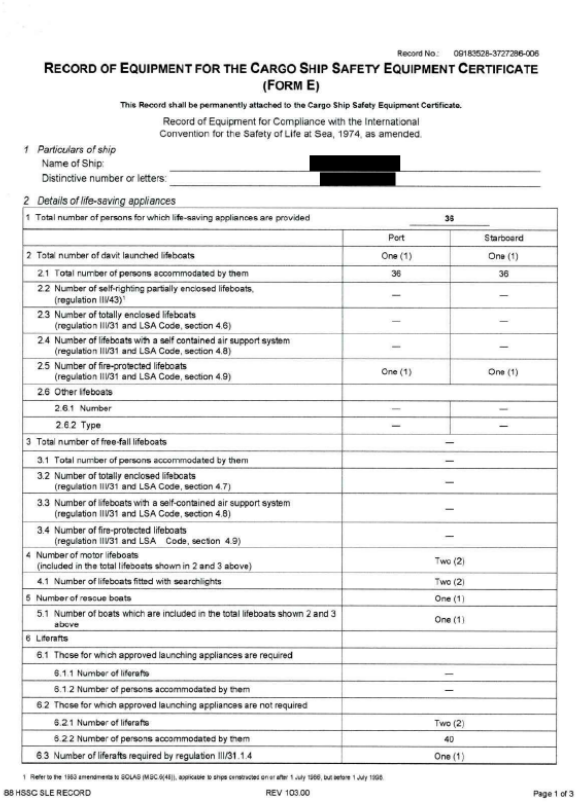
2.3 the ship was provided with a line-throwing appliance and radio installations used in life-saving appliances in accordance with the requirements of the Convention;

2.4 the ship complied with the requirements of the Convention as regards shipborne navigational equipment, means of embarkation for pilots and nautical publications.

1 Delete as appropriate.
2 The above gross tonnage has been determined in accordance with the International Convention on Tonnage Measurement of Ships, 1969.
3 The above gross tonnage has been determined by the authorities of the Administration in accordance with the national tonnage rules which were in force prior to the coming into force for existing ships of the International Convention on Tonnage Measurement of Ships, 1969.
4 For oil tankers, chemical tankers and gas carriers only.
5 Date on which keel was laid or ship was at a similar stage of construction or, where applicable, date on which work for a conversion or an alteration or modification of a major character was commenced.

68 HSSC SLE O2K Rev 103.00 Page 1 of 5

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com



Record No.: 09183528-3727286-006

RECORD OF EQUIPMENT FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE (FORM E)

This Record shall be permanently attached to the Cargo Ship Safety Equipment Certificate.

Record of Equipment for Compliance with the International Convention for the Safety of Life at Sea, 1974, as amended.

1 *Particulars of ship*

Name of Ship: [redacted]

Distinctive number or letters: [redacted]

2 *Details of life-saving appliances*

1 Total number of persons for which life-saving appliances are provided	36	
	Port	Starboard
2 Total number of davit launched lifeboats	One (1)	One (1)
2.1 Total number of persons accommodated by them	36	36
2.2 Number of self-righting partially enclosed lifeboats, (regulation III/43)[1]	—	—
2.3 Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.6)	—	—
2.4 Number of lifeboats with a self contained air support system (regulation III/31 and LSA Code, section 4.8)	—	—
2.5 Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	One (1)	One (1)
2.6 Other lifeboats		
2.6.1 Number	—	—
2.6.2 Type	—	—
3 Total number of free-fall lifeboats	—	
3.1 Total number of persons accommodated by them	—	
3.2 Number of totally enclosed lifeboats (regulation III/31 and LSA Code, section 4.7)	—	
3.3 Number of lifeboats with a self-contained air support system (regulation III/31 and LSA Code, section 4.8)	—	
3.4 Number of fire-protected lifeboats (regulation III/31 and LSA Code, section 4.9)	—	
4 Number of motor lifeboats (included in the total lifeboats shown in 2 and 3 above)	Two (2)	
4.1 Number of lifeboats fitted with searchlights	Two (2)	
5 Number of rescue boats	One (1)	
5.1 Number of boats which are included in the total lifeboats shown 2 and 3 above	One (1)	
6 Liferafts		
6.1 Those for which approved launching appliances are required		
6.1.1 Number of liferafts	—	
6.1.2 Number of persons accommodated by them	—	
6.2 Those for which approved launching appliances are not required		
6.2.1 Number of liferafts	Two (2)	
6.2.2 Number of persons accommodated by them	40	
6.3 Number of liferafts required by regulation III/31.1.4	One (1)	

1 Refer to the 1983 amendments to SOLAS (MSC.6(48)), applicable to ships constructed on or after 1 July 1986, but before 1 July 1998.

B8 HSSC SLE RECORD REV 103.00 Page 1 of 3

IBWM cert issued by DNV, note the name and type of the BWTS are listed

International Oil Pollution Prevention Certificate (IOPP)

As per MARPOL Annex 1 Regulation 6, every oil tanker of 150 gross tonnage and above, and every other ship of 400 gross tonnage and above, shall be required to carry an International Oil Pollution Prevention Certificate which proves that the vessel has been surveyed and found compliant with the applicable provisions of MARPOL Annex 1. Surveys for the renewal of the IOPP Certificate includes verification that a vessel's structure, equipment, systems, fittings, arrangements and material comply with the applicable provisions of MARPOL Annex 1.

When an Initial survey and the subsequent 5-yearly Renewal surveys have confirmed that all applicable items are in a satisfactory condition and are fit for the service for which the ship is intended, a IOPP Certificate will be issued by a vessel's Flag State or a Recognised Organisation such as a Classification Society. The IOPP Certificate is subject to an annual survey (+/- 3 months of each anniversary date) and an Intermediate survey (+/- 3 months from the 2nd or 3rd anniversary date) to confirm continued compliance with the applicable regulations.

A surveyor should check that the original IOPP Certificate on board is valid with no overdue surveys. A short-term IOPP Certificate may be issued due to a known defect for which a Condition or dispensation has been issued. If a short-term certificate is issued, the reason why should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. IOPP Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognised Organisation. Any notable exemptions should be highlighted within the inspection checklist.

증서번호 제 호
Cert. No. YSU-IOPPA-0145-21

REISSUED

국 제 기 름 오 염 방 지 증 서
INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE

대 한 민 국
REPUBLIC OF KOREA

이 증서에는 구조 및 설비 기록부를 추록으로 첨부하여야 합니다.
This certificate shall be supplemented by a Record of Construction and Equipment.
1973년 선박으로부터의 오염방지를 위한 국제협약에 관한 1978년 의정서에 의하여 수정되고, 그 이후 개정된 1973년 선박으로부터의 오염방지를 위한 국제협약(이하"협약"이라 한다.)의 규정에 의하여 대한민국 정부의 권한으로 한국선급에서 발행합니다.
Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended, (hereinafter referred to as "the Convention") under the authority of the Government of the Republic of Korea by Korean Register.

선박의 명세 (Particular of ship)

선 명 Name of Ship	선박번호 또는 호출부호 Distinctive Number or Letters	선적항 Port of Registry	총톤수 Gross Tonnage	재화중량톤수 (미터톤) Deadweight of Ship (metric tonnes)	IMO 번호 IMO Number
[redacted]	[redacted]	JEJU	3,430	-	[redacted]

선박의 종류
Type of Ship

~~유조선~~
~~Oil tanker~~
~~유조선 이외의 선박으로 협약 부속서 I 제18규칙에 규정하는 화물 탱크를 가진 선박~~
~~Ship other than an oil tanker with cargo tanks coming under Regulation 2.2 of Annex I of the Convention~~
기타의 선박
Ship other than any of the above

이 증서는 다음 사항을 증명합니다 :
THIS IS TO CERTIFY :
1. 이 선박이 협약 부속서 I 제6규칙의 규정에 따라 검사를 받았음.
That the ship has been surveyed in accordance with Regulation 6 of Annex I of the Convention; and
2. 검사의 결과 이 선박의 구조,설비시스템,장치,부착물,배치 및 재료와 그 상태가 모든 점에서 만족하며, 이 선박이 협약 부속서 I의 해당 요건에 적합함.
That the survey shows that the structure, equipment systems, fittings, arrangements and material of the ship and the conditions thereof are in all respects satisfactory and that the ship complies with the applicable Requirements of Annex I of the Convention.

이 증서는 협약 부속서 I 제6규칙에 따라 검사를 받는 것을 조건으로 2022 년 9 월 1 일까지 유효합니다.
This certificate is valid until 1st day of September 2022 subject to surveys in accordance with Regulation 6 of Annex I of the Convention.

증서 발행의 근거가 되는 검사가 완료된 일자: 2017 년 9 월 2 일
Completion date of the survey on which this certificate is based: 02 September 2017

2021 년 9 월 19 일 여수광양 에서 발행합니다.
Issued at Yeosu-Gwangyang on the 19th day of September 2021

한 국 선 급
KOREAN REGISTER

Surveyor (PARK Sunghwa)

Please find above a redacted example of an International Oil Pollution Prevention Certificate issued by KRS

IOPP supplement (Form A or B)

These Records will be permanently attached to the IOPP Certificate and form a useful resource for surveyors. The IOPP supplement includes useful information including the total Bilge water capacity and total Sludge and Residues Capacity which needs to be recorded within our inspection checklist.

Two formats for this supplement exist:

- FORM A-Record of Construction and equipment for ships other than oil tankers
- FORM B- Record of Construction and equipment for oil tankers

FORM A includes:

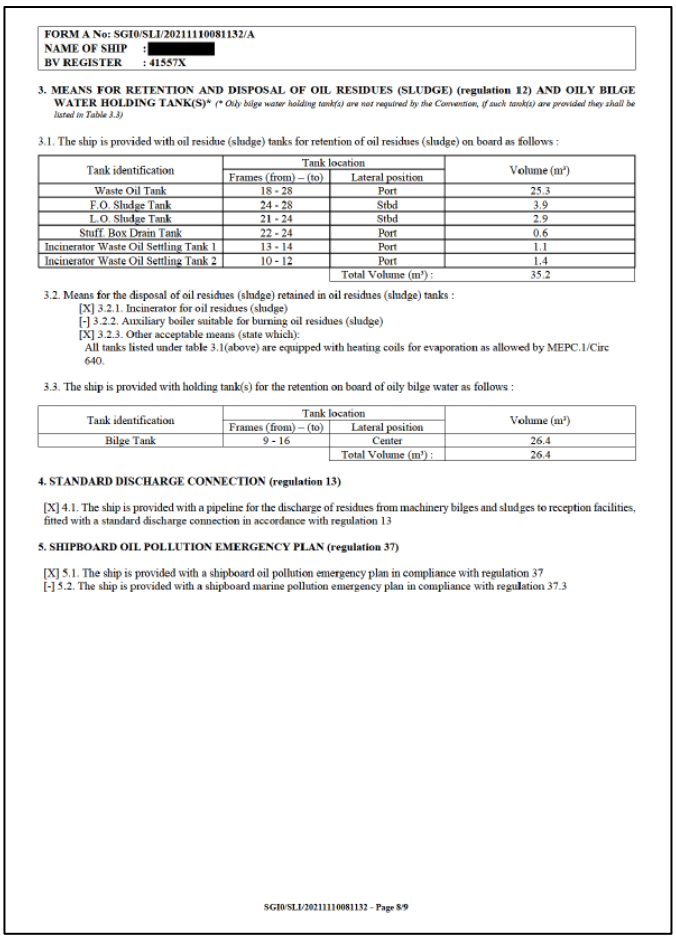
- Particulars of ship
- Equipment for the control of oil discharge from machinery space bilges and oil fuel tanks(MARPOL Regulations 16 and 14)
- Means for retention and disposal of oil residues (sludge) (MARPOL Regulation 12) and oily bilge water holding tank(s) (includes whether an Incinerator Sludge Burning System is provided).
- Standard discharge connection(MARPOL Regulation 13)
- Shipboard oil/marine pollution emergency plan (MARPOL Regulation 37)
- Equivalents (MARPOL Regulation 5)

FORM B includes:

- Particulars of ship
- Equipment for the control of oil discharge from machinery space bilges and oil fuel tanks (MARPOL Regulations 16 and 14)
- Means for retention and disposal of oil residues (sludge) (MARPOL Regulation 12) and oily bilge water holding tank(s)
- Standard Discharge connection (MARPOL Regulation 13)
- Construction (MARPOL Regulations 18, 19, 20, 23, 26, 27 and 28)
- Segregated Ballast
- Double hull and double bottoms
- Accidental outflow protection
- Limitations of size and arrangements of cargo tanks
- Intact stability
- Subdivision and damage stability
- Crude oil washing
- Retention of oil on board (MARPOL Regulations 29, 31 and 32)
- Pumping, piping and discharge arrangements (MARPOL Regulation 30)
- Shipboard oil/marine pollution emergency plan (MARPOL Regulation 37)
- Ship-to-ship oil transfer operations at sea (MARPOL Regulation 41)
- Exemptions
- Equivalents (MARPOL Regulation 5)

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

To retrieve a copy of the International Oil Pollution Prevention Certificate & appropriate supplement (Form A or Form dependent upon type of vessel being inspected) during the inspection, the Master will often have a folder of electronic PDF versions of Class issued Certificates on a computer. This then can be provided by the Master to the attending surveyor by means of an email attachment. If however, this is not the case, there will likely be a hard copy certificate in an issued Class Certificates folder, often kept within the Master's office. The hard copy can be scanned by mobile or other similar device using applications such as CamScanner or PDF Scanner.



FORM A No: SGI0/SLI/20211110081132/A
NAME OF SHIP : [redacted]
BV REGISTER : 41557X

3. MEANS FOR RETENTION AND DISPOSAL OF OIL RESIDUES (SLUDGE) (regulation 12) AND OILY BILGE WATER HOLDING TANK(S)* *(* Oily bilge water holding tank(s) are not required by the Convention, if such tank(s) are provided they shall be listed in Table 3.3)*

3.1. The ship is provided with oil residue (sludge) tanks for retention of oil residues (sludge) on board as follows :

Tank identification	Tank location		Volume (m³)
	Frames (from) – (to)	Lateral position	
Waste Oil Tank	18 - 28	Port	25.3
F.O. Sludge Tank	24 - 28	Stbd	3.9
L.O. Sludge Tank	21 - 24	Stbd	2.9
Stuff. Box Drain Tank	22 - 24	Port	0.6
Incinerator Waste Oil Settling Tank 1	13 - 14	Port	1.1
Incinerator Waste Oil Settling Tank 2	10 - 12	Port	1.4
		Total Volume (m³) :	35.2

3.2. Means for the disposal of oil residues (sludge) retained in oil residues (sludge) tanks :
[X] 3.2.1. Incinerator for oil residues (sludge)
[-] 3.2.2. Auxiliary boiler suitable for burning oil residues (sludge)
[X] 3.2.3. Other acceptable means (state which):
All tanks listed under table 3.1(above) are equipped with heating coils for evaporation as allowed by MEPC.1/Circ 640.

3.3. The ship is provided with holding tank(s) for the retention on board of oily bilge water as follows :

Tank identification	Tank location		Volume (m³)
	Frames (from) – (to)	Lateral position	
Bilge Tank	9 - 16	Center	26.4
		Total Volume (m³) :	26.4

4. STANDARD DISCHARGE CONNECTION (regulation 13)

[X] 4.1. The ship is provided with a pipeline for the discharge of residues from machinery bilges and sludges to reception facilities, fitted with a standard discharge connection in accordance with regulation 13

5. SHIPBOARD OIL POLLUTION EMERGENCY PLAN (regulation 37)

[X] 5.1. The ship is provided with a shipboard oil pollution emergency plan in compliance with regulation 37
[-] 5.2. The ship is provided with a shipboard marine pollution emergency plan in compliance with regulation 37.3

SGI0/SLI/20211110081132 - Page 8/9

**Please find above a redacted example of an International Oil Pollution Prevention Certificate supplement Form A issued by BV. Here under 3.1 the table clearly illustrates capacities of oil residues (sludge) onboard.*

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

International Air Pollution Prevention (IAPP) Certificate & Supplement

As per MARPOL Annex 6 Regulation 5, every ship of 400 gross tonnage and above and every fixed and floating drilling rig and other platforms shall be required to carry an International Air Pollution Prevention Certificate which proves that the vessel has been surveyed and found compliant with the applicable provisions of MARPOL Annex 6 Chapter 3.

Idwal do not require a copy of the IAPP certificate but do require a copy of the supplement to the IAPP which should be permanently attached to the IAPP certificate. Please make sure that the supplement is provided and not just the IAPP certificate. The IAPP supplement contains the list of Ozone Depleting Substances (ODS) (requested in our inspection checklist), a table of marine diesel engines with their NOx tiers (requested in our inspection checklist), details of Sulphur Oxides (SOx) and particulate matter emissions, details of Volatile Organic Compounds (VOC) emissions (this includes details of any Vapour collection system and the VOC plan), details of shipboard incineration and applicable Equivalents.

Please check the IAPP supplement for details of any Ozone Depleting Substances (ODS), stating whether a vessel is using ODS accurately is a common error in the network, but it can be easily checked. The most common ODS seen on ships is HCFC 22 or freon. From January 2020 production and sale of new R-22 was banned, with only recycled R-22 being permitted to be used moving forward. It is likely that the supply of R22 will soon become difficult and consideration to change out to an ozone friendly alternative, such as R-453a, once on board supply is used up, is recommended. This is an important item for the survey.

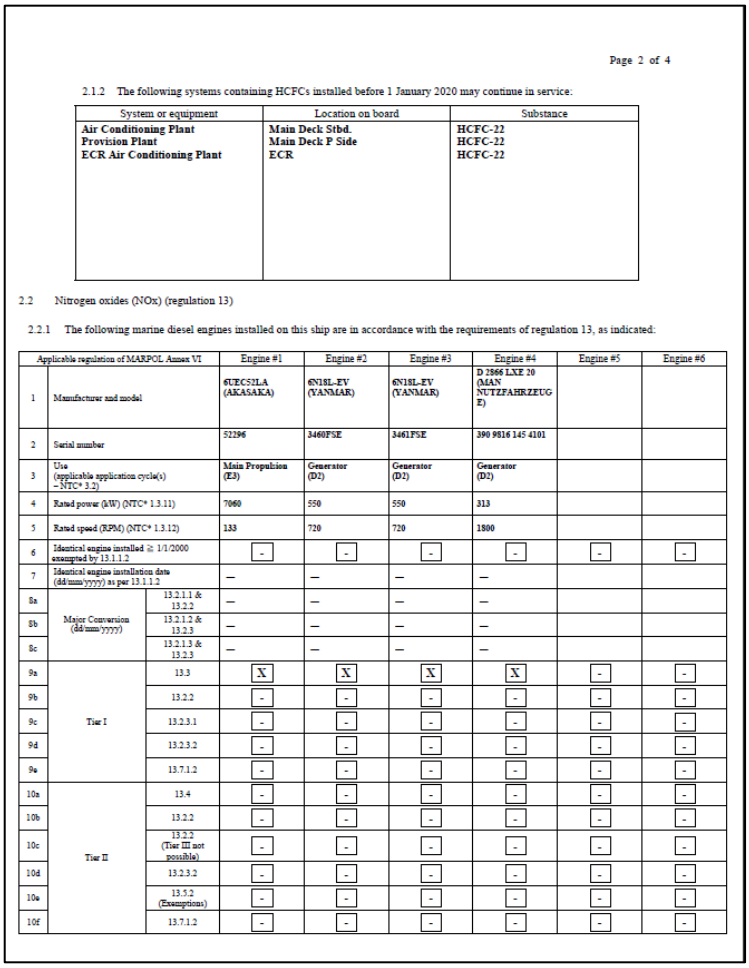
The form also contains a table of Marine Engines. The Main and Auxiliary Engine Specifications (NOx tiers, power, design and model) in the inspection checklist can be filled out using this information. Furthermore, the IAPP supplement can be used to verify whether an Incinerator is onboard.

The IAPP is also useful in being able to stipulate if there is an Exhaust Gas Cleaning System (EGCS) onboard. Details of the EGCS will be detailed within the equivalence table at the bottom of the IAPP Supplement. The entry will note whether the EGCS system installed is; Open, Closed or Hybrid.

The IAPP Certificate is used as the deadline for the Energy Efficiency Existing Ship Index (EEXI) Regulations. The vessel will have to demonstrate compliance by the annual, intermediate or renewal IAPP survey date (whichever comes first) on or after 1 January 2023.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

A surveyor should check that the original IAPP Certificate on board a vessel is valid with no overdue surveys. A short-term IAPP Certificate may be issued due to a known defect for which a Condition or dispensation has been issued. If a short-term certificate is issued, the reason why should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. IAPP Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognised Organisation. Any notable exemptions should be highlighted within the inspection checklist.



Page 2 of 4

2.1.2 The following systems containing HCFCs installed before 1 January 2020 may continue in service:

System or equipment	Location on board	Substance
Air Conditioning Plant **Provision Plant** **ECR Air Conditioning Plant**	**Main Deck Stbd.** **Main Deck P Side** **ECR**	**HCFC-22** **HCFC-22** **HCFC-22**

2.2 Nitrogen oxides (NOx) (regulation 13)

2.2.1 The following marine diesel engines installed on this ship are in accordance with the requirements of regulation 13, as indicated:

Applicable regulation of MARPOL Annex VI			Engine #1	Engine #2	Engine #3	Engine #4	Engine #5	Engine #6
1	Manufacturer and model		**6UEC52LA (AKASAKA)**	**6N18L-EV (YANMAR)**	**6N18L-EV (YANMAR)**	**D 2866 LXE 20 (MAN NUTZFAHRZEUGE)**		
2	Serial number		**52296**	**3460FSE**	**3461FSE**	**390 9816 145 4101**		
3	Use (applicable application cycle(s) – NTC* 2.2)		**Main Propulsion (E3)**	**Generator (D2)**	**Generator (D2)**	**Generator (D2)**		
4	Rated power (kW) (NTC* 1.3.11)		**7060**	**550**	**550**	**313**		
5	Rated speed (RPM) (NTC* 1.3.12)		**133**	**720**	**720**	**1800**		
6	Identical engine installed ≥ 1/1/2000 exempted by 13.1.1.2		-	-	-	-	-	-
7	Identical engine installation date (dd/mm/yyyy) as per 13.1.1.2		–	–	–	–		
8a	Major Conversion (dd/mm/yyyy)	13.2.1.1 & 13.2.2	–	–	–	–		
8b		13.2.1.2 & 13.2.3	–	–	–	–		
8c		13.2.1.3 & 13.2.3	–	–	–	–		
9a	Tier I	13.3	X	X	X	X	-	-
9b		13.2.2	-	-	-	-	-	-
9c		13.2.3.1	-	-	-	-	-	-
9d		13.2.3.2	-	-	-	-	-	-
9e		13.7.1.2	-	-	-	-	-	-
10a	Tier II	13.4	-	-	-	-	-	-
10b		13.2.2	-	-	-	-	-	-
10c		13.2.2 (Tier III not possible)	-	-	-	-	-	-
10d		13.2.3.2	-	-	-	-	-	-
10e		13.5.2 (Exemptions)	-	-	-	-	-	-
10f		13.7.1.2	-	-	-	-	-	-

Page 2 of this IAPP supplement shows the vessels engines are NOx tier 1 and the refrigeration systems contain HCFC 22(freon), this is largely as expected for the vessel which is an early 21st century general cargo ship

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

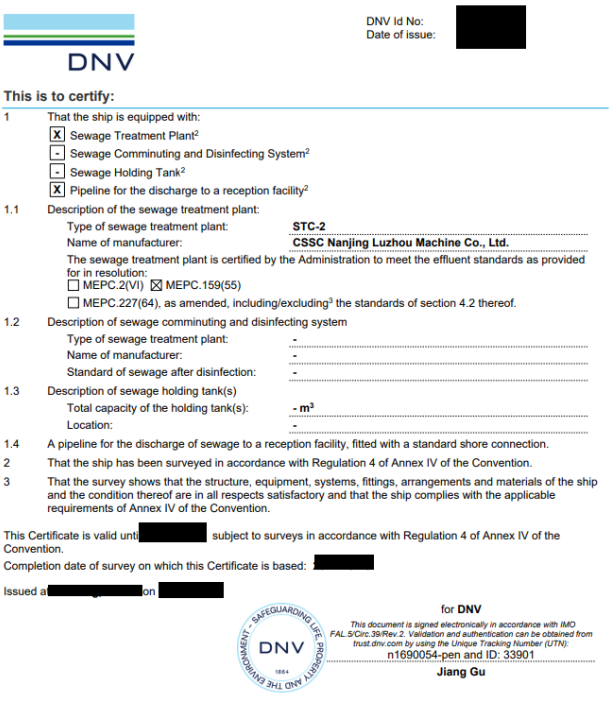
International Sewage Pollution Prevention (ISPP) Certificate and Supplement

The International Sewage Pollution Prevention Certificate confirms that a ship is equipped with a sewage treatment plant/comminutor/ holding tank and a discharge pipeline in compliance with Regulations 9 and 10 of Annex IV of MARPOL and that the ship has been surveyed in accordance with Regulation 4 of Annex IV of MARPOL.

When an Initial survey, additional survey (as required) and the subsequent 5-yearly Renewal surveys have confirmed that all applicable items are in a satisfactory condition and are fit for the service for which the ship is intended, a ISPP Certificate will be issued by a vessel's Flag State or a Recognised Organisation such as a Classification Society.

The ISPP certificate will contain useful details including a description of the sewage treatment plant, comminutor or holding tank. The bottom of the ISPP certificate often contains an additional note which identifies any tanks or transfer lines approved for storage and transfer of treated sewage or grey water which cannot be discharged in port.

As an additional delete note, Regulation 11.1.1 of the revised Annex IV of MARPOL 73/78 requires that untreated sewage, which may be discharged at more than 12 nautical miles from the nearest land, should not be discharged instantaneously but at a moderate rate of discharge when the ship is en route and proceeding at a speed not less than 4 knots. The rate should be approved by the Administration based upon standards developed by the Organisation. The Administration should approve the rate of discharge and thus an approved discharge rate table should be available onboard for vessel's discharging untreated sewage. The table needs to detail the rate and speed to ensure compliance with the applicable Regulation.



DNV

DNV Id No:
Date of issue: [redacted]

This is to certify:

1 That the ship is equipped with:
- [X] Sewage Treatment Plant[2]
- [-] Sewage Comminuting and Disinfecting System[2]
- [-] Sewage Holding Tank[2]
- [X] Pipeline for the discharge to a reception facility[2]

1.1 Description of the sewage treatment plant:
- Type of sewage treatment plant: **STC-2**
- Name of manufacturer: **CSSC Nanjing Luzhou Machine Co., Ltd.**

The sewage treatment plant is certified by the Administration to meet the effluent standards as provided for in resolution:
☐ MEPC.2(VI) ☒ MEPC.159(55)
☐ MEPC.227(64), as amended, including/excluding[3] the standards of section 4.2 thereof.

1.2 Description of sewage comminuting and disinfecting system
- Type of sewage treatment plant: -
- Name of manufacturer: -
- Standard of sewage after disinfection: -

1.3 Description of sewage holding tank(s)
- Total capacity of the holding tank(s): - m³
- Location: -

1.4 A pipeline for the discharge of sewage to a reception facility, fitted with a standard shore connection.

2 That the ship has been surveyed in accordance with Regulation 4 of Annex IV of the Convention.

3 That the survey shows that the structure, equipment, systems, fittings, arrangements and materials of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the applicable requirements of Annex IV of the Convention.

This Certificate is valid unti[redacted] subject to surveys in accordance with Regulation 4 of Annex IV of the Convention.

Completion date of survey on which this Certificate is based: [redacted]

Issued a[redacted]on [redacted]

for **DNV**

This document is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication can be obtained from trust.dnv.com by using the Unique Tracking Number (UTN):
n1690054-pen and ID: 33901

Jiang Gu

Page 2 of a ISPP certificate issued by DNV. As can be seen the vessel has a sewage treatment plant but the holding tank section is blank, indicating the vessel is not fitted with that

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

International Energy Efficiency Certificate (IEEC) and Supplement

An IEEC shows that the ship has been surveyed in accordance with Regulation 5.4 of MARPOL Annex VI and that the survey shows that the ship complies with the applicable requirements in Regulation 20, Regulation 21 and Regulation 22.

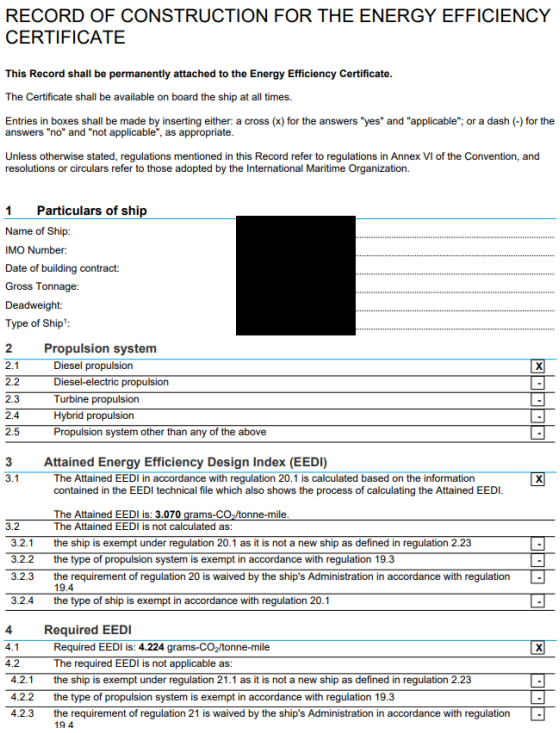
Attached to the IEEC is a supplement. The supplement contains:

- Particulars of the ship
- Particulars of the Main Propulsion System (Diesel propulsion, Diesel-electric propulsion, Diesel-electric propulsion, Turbine propulsion, Hybrid propulsion or Propulsion system other than any of the above).
- Attained Energy Efficiency Design Index (EEDI) or Attained Energy Efficiency Existing Ship Index (EEXI) (after first IAPP Annual inspection post 01-Jan-2023).
- A statement as to why the Energy Efficiency Design Index (EEDI) is not required.
- Calculated required EEDI or EEXI (after first IAPP Annual inspection post 01-Jan-2023)
- A statement that the ship is provided with a Ship Energy Efficiency Management Plan (SEEMP) in compliance with Regulation 22
- A statement that the IEEC Certificate is accompanied by the EEDI technical file in compliance with Regulation 20.1.

The EEXI is a calculated score of a vessel's design efficiency in terms of the total carbon output per ton-mile of cargo carried. It is calculated using an algorithm defined by the IMO and is measured in grams of CO2 per ton-nautical mile (gCO2/t.Nm). A vessel's Attained EEXI is calculated based on the vessel's size, propulsion power, design and technology features. This Attained EEXI must be below the Required EEXI for vessels of that type and size. A vessel must achieve an Attained EEXI lower than the Required EEXI, construct an EEXI technical file and have it verified by the first renewal of the International Air Pollution Prevention (IAPP) certificate after the 1st January 2023.

Vessels built after 2016 are required to have their EEXI value calculated during build, where this score is known as the EEDI. If a vessel has an EEDI score, this value is taken as the vessel's current Attained EEXI

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com



RECORD OF CONSTRUCTION FOR THE ENERGY EFFICIENCY CERTIFICATE

This Record shall be permanently attached to the Energy Efficiency Certificate.

The Certificate shall be available on board the ship at all times.

Entries in boxes shall be made by inserting either: a cross (x) for the answers "yes" and "applicable"; or a dash (-) for the answers "no" and "not applicable", as appropriate.

Unless otherwise stated, regulations mentioned in this Record refer to regulations in Annex VI of the Convention, and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

Name of Ship: [redacted]
IMO Number:
Date of building contract:
Gross Tonnage:
Deadweight:
Type of Ship[1]:

2 Propulsion system

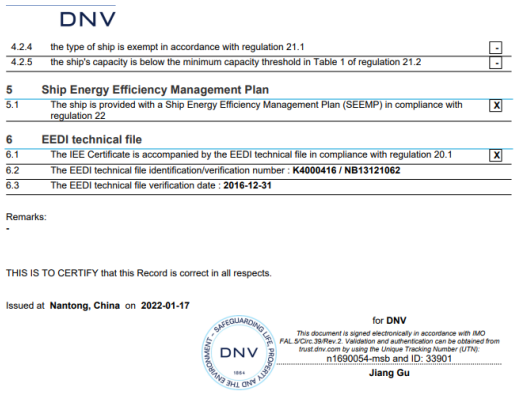
2.1	Diesel propulsion	X
2.2	Diesel-electric propulsion	-
2.3	Turbine propulsion	-
2.4	Hybrid propulsion	-
2.5	Propulsion system other than any of the above	-

3 Attained Energy Efficiency Design Index (EEDI)

3.1	The Attained EEDI in accordance with regulation 20.1 is calculated based on the information contained in the EEDI technical file which also shows the process of calculating the Attained EEDI. The Attained EEDI is: **3.070** grams-CO_2/tonne-mile.	X
3.2	The Attained EEDI is not calculated as:	
3.2.1	the ship is exempt under regulation 20.1 as it is not a new ship as defined in regulation 2.23	-
3.2.2	the type of propulsion system is exempt in accordance with regulation 19.3	-
3.2.3	the requirement of regulation 20 is waived by the ship's Administration in accordance with regulation 19.4	-
3.2.4	the type of ship is exempt in accordance with regulation 20.1	-

4 Required EEDI

4.1	Required EEDI is: **4.224** grams-CO_2/tonne-mile	X
4.2	The required EEDI is not applicable as:	
4.2.1	the ship is exempt under regulation 21.1 as it is not a new ship as defined in regulation 2.23	-
4.2.2	the type of propulsion system is exempt in accordance with regulation 19.3	-
4.2.3	the requirement of regulation 21 is waived by the ship's Administration in accordance with regulation 19.4	-



DNV

4.2.4	the type of ship is exempt in accordance with regulation 21.1	-
4.2.5	the ship's capacity is below the minimum capacity threshold in Table 1 of regulation 21.2	-

5 Ship Energy Efficiency Management Plan

5.1	The ship is provided with a Ship Energy Efficiency Management Plan (SEEMP) in compliance with regulation 22	X

6 EEDI technical file

6.1	The IEE Certificate is accompanied by the EEDI technical file in compliance with regulation 20.1	X
6.2	The EEDI technical file identification/verification number : **K4000416 / NB13121062**	
6.3	The EEDI technical file verification date : **2016-12-31**	

Remarks:
-

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at **Nantong, China** on **2022-01-17**

for **DNV**

This document is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication can be obtained from trust.dnv.com by using the Unique Tracking Number (UTN): n1690054-msb and ID: 33901

Jiang Gu

The second page confirms this vessel had a SEEMP and EEDI technical file.

Details of this record of construction show the vessel is quite modern and has an EEDI calculated at build and has diesel propulsion

Inventory of Hazardous Materials (IHM) Class approval Certificate

Inventory of Hazardous Material (IHM) is a document identifying all potentially hazardous materials on board a vessel. Hidden hazards are identified, located and quantified following IMO Resolution guidelines. The inventory replaces the Green Passport, adopted in the Hong Kong International Convention in 2009, and is a requirement by the EU Ship Recycling Regulation 2013. An IHM is required by the following conventions:

- Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009)
- EU Ship Recycling regulations (SRR)

The EU Ship Recycling Regulation No 1257/2013 (EU SRR) is aimed at facilitating early ratification of HKC with higher requirements on control of hazardous materials and approval of ship recycling facilities. Concerning the IHM preparation, in addition to Appendix 1 and 2 of the HKC which lists 13 hazardous materials, two additional hazardous materials have been added by the EU SRR, namely Perfluorooctane Sulfonic Acid (PFOS) and Brominated Flame Retardant (HBCDD). The EU

Ship Recycling Regulation came into force on 31 December 2020 and effects any in-service ship of 500 GT or over calling at any EU* port or anchorage (regardless of flag). It requires that vessels hold a valid and certified Inventory Hazardous Materials (IHM) on board. This also continues to apply under the UK Ship Recycling Regulation (UK SRR), following the UK's exit from the EU.

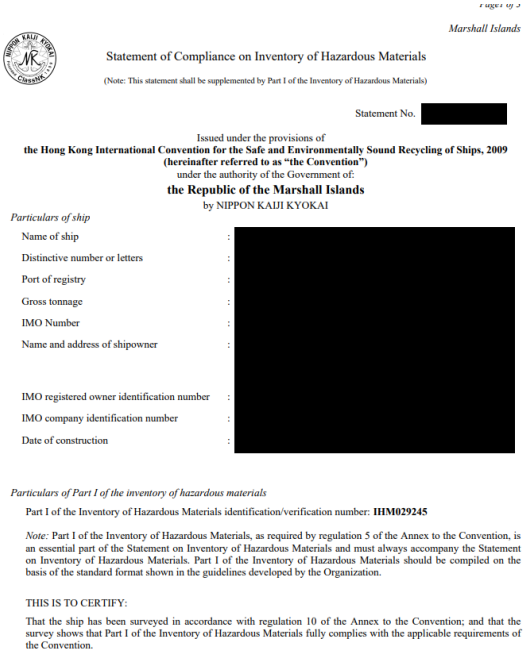
If a vessel is flagged under an EU/EEA Member State, an IHM certificate as per EU SRR is required.

If the vessel is flagged under a third county, but visiting EU/EEA ports or anchorages, the vessel would need an EU SRR IHM Statement of Compliance (SoC).

Considering the change of trading route and possibility of change of flag, most of our clients require a vessel to have an IHM according to the EU SRR requirements, and to obtain two compliance declarations (EU SRR and HKC).

It is important that it is verified whether a vessel has a valid Inventory of Hazardous Materials (IHM) Class or Flag approval certificate which proves that an approved IHM is on board and the required surveys have been carried out . A vessel may have a Class or Flag approved Inventory of Hazardous Materials IHM), though the approval may be in accordance only with the 2009 Hong Kong Convention and may not mention the EU Regulation 1257/2013. It is currently understood that EMSA and the European ports require the approval to refer specifically to the EU Regulation 1257/2013.

A vessel's IHM approval status should be verified and if the vessel doesn't have an approved IHM, has an invalid IHM approval certificate or does not carry an IHM approval certificate specifically stating compliance with the additional requirements stipulated by the EU Ship Recycling regulations (SRR) (reg.1257/2013), then this should be reported as a Notable Item within the Idwal inspection checklist.



Marshall Islands

Statement of Compliance on Inventory of Hazardous Materials

(Note: This statement shall be supplemented by Part I of the Inventory of Hazardous Materials)

Statement No. [redacted]

Issued under the provisions of
the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention")
under the authority of the Government of:
the Republic of the Marshall Islands
by NIPPON KAIJI KYOKAI

Particulars of ship

Name of ship :
Distinctive number or letters :
Port of registry :
Gross tonnage :
IMO Number :
Name and address of shipowner :
IMO registered owner identification number :
IMO company identification number :
Date of construction :

Particulars of Part I of the inventory of hazardous materials

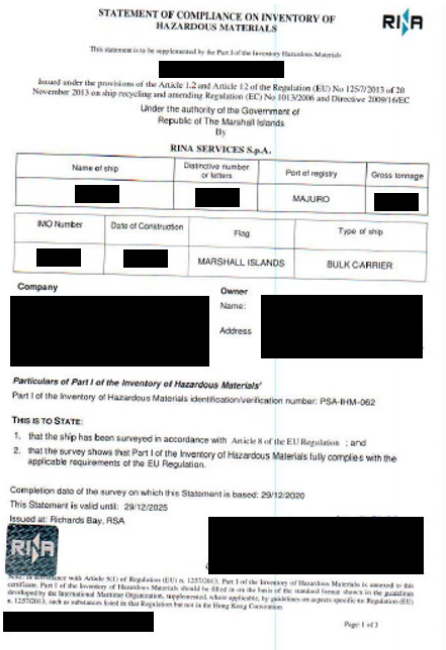
Part I of the Inventory of Hazardous Materials identification/verification number: **IHM029245**

Note: Part I of the Inventory of Hazardous Materials, as required by regulation 5 of the Annex to the Convention, is an essential part of the Statement on Inventory of Hazardous Materials and must always accompany the Statement on Inventory of Hazardous Materials. Part I of the Inventory of Hazardous Materials should be compiled on the basis of the standard format shown in the guidelines developed by the Organization.

THIS IS TO CERTIFY:

That the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention; and that the survey shows that Part I of the Inventory of Hazardous Materials fully complies with the applicable requirements of the Convention.

Statement of compliance indorsed by Class NKK



STATEMENT OF COMPLIANCE ON INVENTORY OF HAZARDOUS MATERIALS

RINA

This statement is to be supplemented by the Part I of the Inventory Hazardous Materials

[redacted]

Issued under the provisions of the Article 1.2 and Article 12 of the Regulation (EU) No 1257/2013 of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC

Under the authority of the Government of
Republic of The Marshall Islands
By
RINA SERVICES S.p.A.

Name of ship	Distinctive number or letters	Port of registry	Gross tonnage
[redacted]	[redacted]	MAJURO	[redacted]

IMO Number	Date of Construction	Flag	Type of ship
[redacted]	[redacted]	MARSHALL ISLANDS	BULK CARRIER

Company [redacted]

Owner
Name:
Address [redacted]

Particulars of Part I of the Inventory of Hazardous Materials'

Part I of the Inventory of Hazardous Materials identification/verification number: PSA-IHM-062

THIS IS TO STATE:

1. that the ship has been surveyed in accordance with Article 8 of the EU Regulation ; and
2. that the survey shows that Part I of the Inventory of Hazardous Materials fully complies with the applicable requirements of the EU Regulation.

Completion date of the survey on which this Statement is based: 29/12/2020

This Statement is valid until: 29/12/2025

Issued at: Richards Bay, RSA

RINA [redacted]

[redacted]

Page 1 of 3

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

Latest Class Status Report (CSR)

This is one of the most important documents that we require. A Class Status Report is a Classification Society specific report which lists pertinent information relating to the vessel's Status in regards to Class or Statutory items including but not limited to:

- The main particulars of the vessel including the Notations which can be used to confirm the vessel's features.
- Survey schedules and due dates
- Status of any open Class or Statutory Conditions
- Status of any open Class or Statutory Memoranda
- An overview of Class & Statutory certificates issued by the Society

Any Class Status report provided should be as recent as possible, and no more than 1 month old. If a Class status is provided that is more than a month old, this should be stated in the inspection checklist. Condition and Statutory Condition are very significant items to most of our clients, so special attention needs to be paid to this section. If the vessel has any open Conditions, then these Conditions should be reported within the relevant section of the Idwal inspection checklist. The status of any Conditions should be thoroughly investigated onboard in order to determine the nature of the Condition, the plan for rectification, the cause of the Condition and the status of any spare parts required to carry out repairs. If a Condition has reportedly been closed or the due date is prior to the inspection date then an updated Class Status report should be requested in order to verify if the Condition has been closed out, extended or is overdue.

The list of Class Memoranda (sometimes referred to Asset Notes or Actionable Items) should also be thoroughly reviewed and investigated in a similar way as required with Conditions, as Memoranda items may be pertinent to our clients and may require future rectifying action. We frequently see significant issues listed as Memoranda, and thus Memoranda should not be dismissed as un-important.

ClassNK NIPPON KAIJI KYOKAI

NK-SHIPS

Survey and/or Audit Status, History and Particulars Information Service

Header from a multi page Class status issued by Class NK

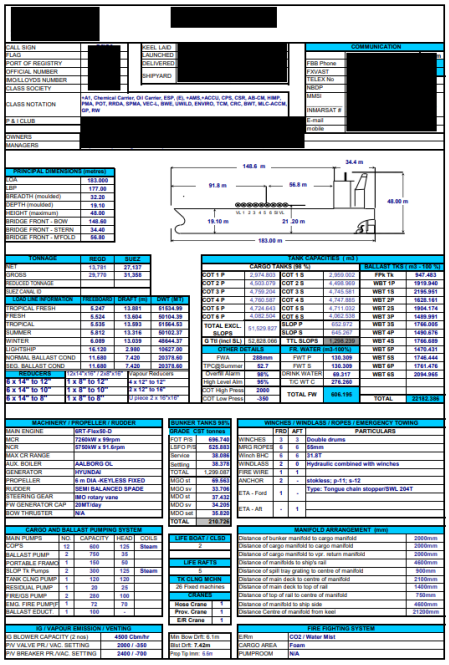
☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

IDWAL TECHNICAL GUIDE

Vessel Particulars

This provides a useful overview of the vessel's particulars. The document is usually maintained within a company specific form. Should be reviewed for pertinent information which can be used to fill up some of the requested information within the Idwal inspection checklist including but not limited the to the Tank Capacities, Consumption Information, Tonnages, Machinery Details, Cargo Hold/Tank Capacities, Cargo Hold Uniform Deck Loads, Cargo Handling Equipment particulars, etc.

Right: Ship particulars for a chemical tanker

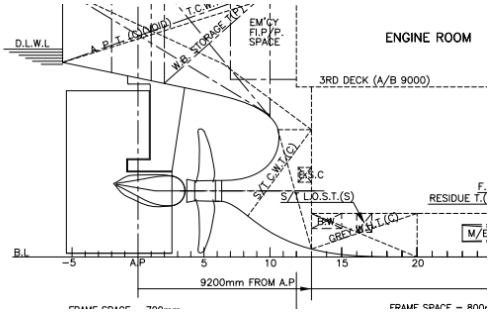


General Arrangement (GA) Plan

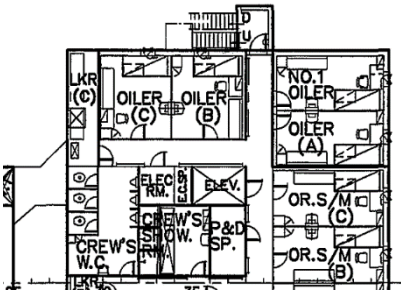
The GA plan depicts the division and arrangement of the ship and includes the side view, plan views of most decks and cross-sections.

The GA plan is usually available on board as a digital copy. If no digital copy is available, the hard copy should be photographed to a sufficient standard to allow all the details on the GA plan to be clearly visible.

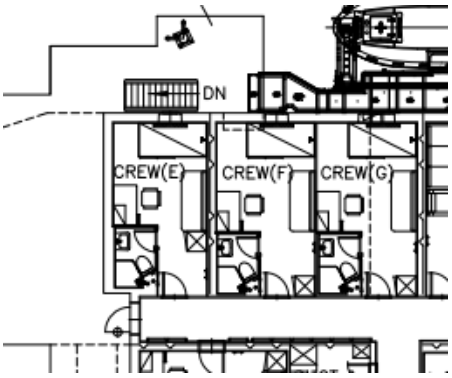
The GA plan contains pertinent details including a pictorial overview of the rudder and propeller arrangement which allows a surveyor to determine if a Rudder bulb or Pre and Post Swirl devices are fitted. Furthermore, it provides an overview of the accommodation, which allows a surveyor to determine if all cabins are fitted with attached toilets and showers (en-suite) or if shared sanitation facilities are provided.



Section of a GA plan clearly showing that a rudder bulb is fitted



A typical Japanese build bulk carrier were the crew have their own cabins but share a toilet and shower block.

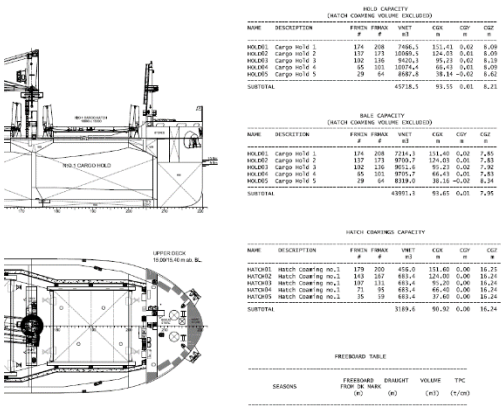


Section of a tanker GA plan showing crew cabins with their own bathrooms, sofa and a desk.

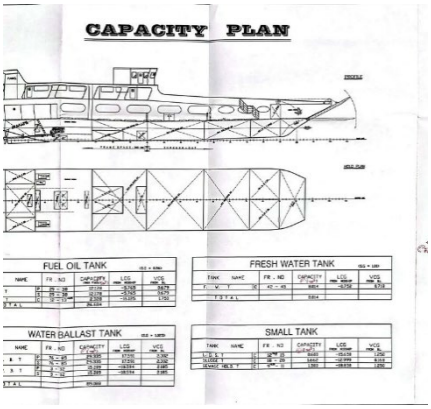
☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Capacity Plan

This is a plan of the spaces available for cargo, fuel, freshwater, water ballast, etc, and containing cubic or weight capacity lists for such spaces and a scale showing deadweight capacities at varying draughts and displacements. If the Capacity Plan is not available in digital format, then please take clear legible photos of the hard copy plan, label the photos and upload them under the Capacity Plan tab within the Inspection Portal. The Capacity Plan can be used to get some of the necessary information required for our inspection checklist, including but not limited to, the Tank Capacities, Cargo Capacities, Uniform Deck Load, Number of Grades of Cargo a vessel can load (Tanker), containers carried for container ships etc.



Part of the capacity plan of a geared bulker, note the differing capacities for grain and bale cargoes and the effect on stability



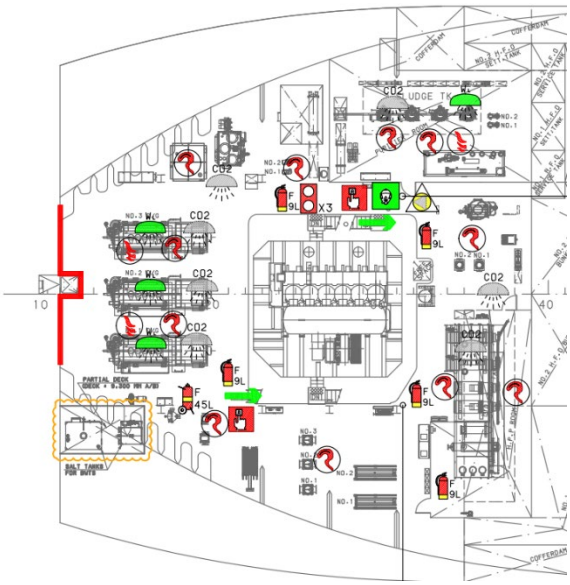
A well photographed extract from a domestic ferry, all figures are clearly readable.

Extract from an oil tanker capacity plan

Fire and Safety Plan

This should be available on board in digital format. If this is not the case, please ensure that any photographs of the plans are clear and detailed enough to show the types of equipment carried, any summary tables of equipment numbers and that similar looking icons (such as detector heads and extinguishers) are discernible. Multiple photos of any paper plans or charts should be clearly named before uploading through the portal. Care should be taken not to confuse portable fire extinguishers with fixed systems, such as a Carbon Dioxide extinguisher in the galley with a Carbon Dioxide fixed system. The Fire and Safety Plan can be used to verify the information provided in the Pre-Inspection Details.

Extract from the main living area of a typical chemical tanker. The detectors and fixed systems for the engine room and galley can be clearly seen.



Engine room Extract from the same chemical tanker. The fixed CO2 and Water system can be seen along with the flame and smoke detectors.

Bridge and Engine Room Machinery and equipment list of makers

We require an up-to-date list of Bridge Equipment, Deck Equipment and Machinery and Engine Room Equipment and Machinery. Whilst the format of the lists provided will vary from vessel to vessel, it is important that as a minimum the lists are complete, up to date and contain the number, type, manufacturer and model of the equipment and machinery provided on board. Please try your best to obtain a list of Bridge, Deck and Engine Room items.

This list can be critical in being able to determine whether key machinery has been retrofitted onto a vessel. For example, during a dry docking items, including but not limited to, a Ballast Water Treatment System (BWTS), Air Seal for the purposes of VGP compliance or even a Controllable Pitch Propeller (CPP).

In terms of acquiring this document whilst onboard during an inspection, it is often in an electronic format such as PDF or even Excel. The Master or perhaps Chief Engineer are often able to provide this document upon request. If there is a hard copy available on board, this can be scanned by mobile phone or other similar device using applications such as CamScanner or PDF Scanner.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Main Engine Running and Maintenance Hours

This is a document showing the running hours of major components of the Main Engine since they were last overhauled so that any overdue maintenance items can be identified. Any overdue items should be reported in the Idwal Inspection checklist and should be discussed with the crew on board in order to ascertain the reasons for the overdue maintenance, whether the required spare parts for the maintenance are on board and any plans for completing the overdue maintenance.

If items are reported to be on a Condition Based Monitoring Programme, records relating to the last inspections should be requested and reviewed in order to verify compliance. If the running hours recorded within the records provided are markedly different from those declared in the Pre-Inspection Details, then this should be discussed with the crew on board to ensure only accurate figures are provided in the Main Engine Maintenance table in the Idwal inspection checklist. Caution should be exercised when interpreting running hour records, as some forms will specify hours until the next scheduled maintenance or the running hours at the time that the last maintenance was carried out. It should be noted that we report running hours from the last overhaul.

If the vessel has a computer based Planned Maintenance System (PMS), and the running hours since last overhaul are contained within the PMS rather than in a conventional form, a copy of the M.E. PMS status should be taken or documented (photographed), so that the running hours since last overhaul for the main components can be verified against on board records.

Auxiliary Engine(s) Running and Maintenance Hours

This is the same as for the Main Engine running and maintenance hours. It should be noted that for the Auxiliary Engines - Running Hours Since Last Overhaul table in the main Idwal inspection checklist, we require the hours since Piston Overhaul or Decarbonisation for each of the Auxiliary Engines. Within running hour records, this is sometimes referred to as the “Major Overhaul” or simply as the “Overhaul”.

Latest Main Engine Performance Report

The latest Main Engine Performance Reports should be collected or photographed on board. When checking the latest Performance Report, the following items should be considered:

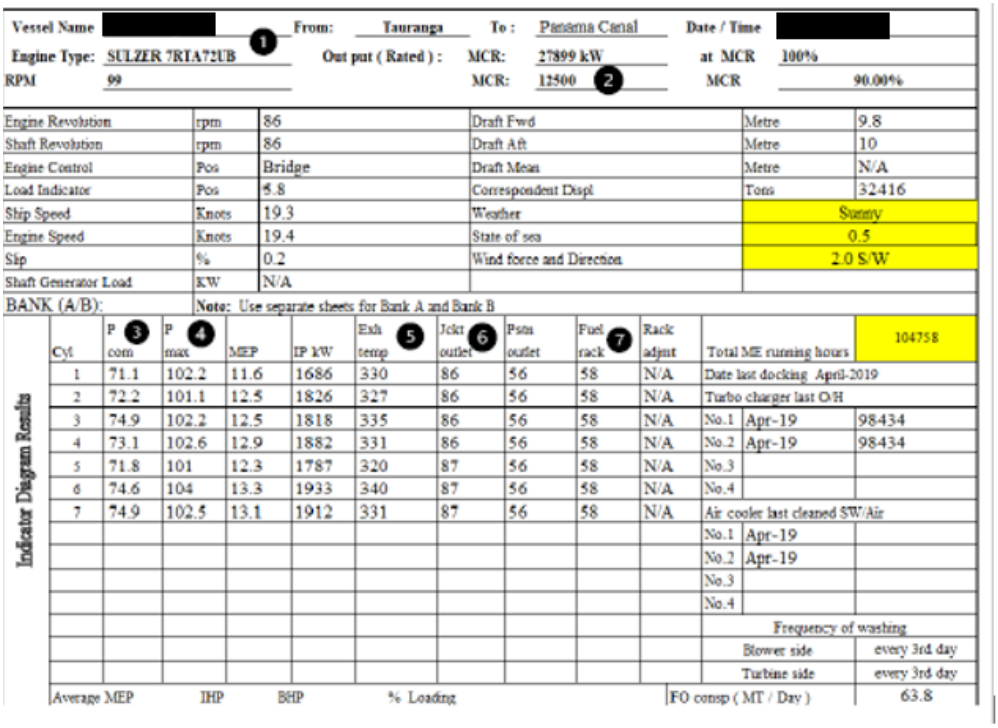
1. Check vessel name and engine type is correct.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

2. Check load %. This should be above 70%. If it is between 60 and 70% continue to review other parameters but make a note in the inspection checklist that the load was below the recommended. If below 60%, the load was too low for accurate performance test and it should be re-done at full load. If there is no % indication of load, it may only say the output in kW. You may then need to check the rated output and calculate the load percentage.
3. Pcomp is the compression pressure. Usually reported in bar, and in the range of 60 to 100 bar. Sometimes reported in MPa; 10bar is roughly 1Mpa. It is the pressure that the air is compressed to by the piston moving upwards. This should be fairly consistent as it depends on fewer components than the Pmax. If there is a deviation of more than 10%, then this should be mentioned in the inspection checklist. Possible causes of deviations are worn cylinder liners, damaged piston rings or leaking exhaust valve.
4. Pmax is the maximum pressure in the cylinder after ignition and occurs after the piston starts to move downwards again. Because this depends on the combustion process, expect this to have more deviation between cylinders. The Pmax is also dependent on Pcomp, so look for a correlation. Poor combustion will also be reflected in the exhaust gas temperatures, so look for a deviation there as well. Anything more than a 15% deviation should be reported. Cylinders also have a tendency to compensate for each other based on their firing order, so if there's a genuine component or combustion issue, expect another cylinder to be affected as well. If the Pmax is below the Pcomp, which is acceptable, it is likely to be a sensor error. Pmax is affected by all the Pcomp factors plus the fuel pump, cam, injectors, turbocharger, cooling water, economizer, etc.
5. Exhaust temperatures should be within approximately 12 to 15% of each other. You can have more leeway if all the other parameters are good, as it is likely the sensors are not very accurate. Keep in mind that exhaust temperatures are NOT the temperatures inside the cylinder during combustion (more around the 1200°C mark), but are the temperatures after the exhaust valve, just before the exhaust manifold. This means that low Pmax may result in higher exhaust temperatures are fuel starts burning off in the manifold.
6. Cooling water outlet temperatures should be pretty similar, within around 5% of each other. A temperature outlet that's above 92°C could result in gasification of the cooling water, and reduced cooling effect and anything below around 77°C could result in dropping below the dewpoint of the Sulphur in the exhaust gases, leading to increased acid attack on the inside of the cylinder liner and therefore increased wear, or worse liner polishing. The cause of incorrect temperatures are likely to be the control valve, though it could be caused by serious mechanical and combustion issues within the cylinder, if all the other temperatures are good.
7. Fuel rack adjustment is basically how much fuel the fuel pump is setup to deliver to the injector. If there is an extreme variation, along with other variations of parameters, then it is noteworthy. Otherwise, it is an operational setting that allows fine-balancing of the engine.
8. Turbocharger data – Check that the air before cooler is warmer than the air after the cooler; exhaust gas before the turbocharger is hotter than the gas after the turbocharger; turbocharger speed should be around 10,000 + rpm for normal 2-strokes. May be lower on particularly large engines.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

9. Lube oil – pressure should be at the very minimum 1.5 Bar; temperature into the engine should not vastly exceed 55°C.
10. If you want to know if the engine was running on HFO or Diesel/MGO, look at the fuel temperature. Diesel will be around the 50 -60°C mark, but HDO has to be heated to at least 110°C.



Vessel Name [redacted]			From: Tauranga		To : Panama Canal			Date / Time [redacted]					
Engine Type: SULZER 7RTA72UB (1)			Out put (Rated) :		MCR: 27899 kW			at MCR 100%					
RPM 99					MCR: 12500 (2)			MCR 90.00%					
Engine Revolution	rpm	86			Draft Fwd			Metre	9.8				
Shaft Revolution	rpm	86			Draft Aft			Metre	10				
Engine Control	Pos	Bridge			Draft Mean			Metre	N/A				
Load Indicator	Pos	5.8			Correspondent Displ			Tons	32416				
Ship Speed	Knots	19.3			Weather			Sunny					
Engine Speed	Knots	19.4			State of sea			0.5					
Slip	%	0.2			Wind force and Direction			2.0 S/W					
Shaft Generator Load	KW	N/A											
BANK (A/B):	Note: Use separate sheets for Bank A and Bank B												
Indicator Diagram Results	Cyl	P com (3)	P max (4)	MEP	IP kW	Exh temp (5)	Jckt outlet (6)	Pstn outlet	Fuel rack (7)	Rack adjmt	Total ME running hours		104758
	1	71.1	102.2	11.6	1686	330	86	56	58	N/A	Date last docking April-2019		
	2	72.2	101.1	12.5	1826	327	86	56	58	N/A	Turbo charger last O/H		
	3	74.9	102.2	12.5	1818	335	86	56	58	N/A	No.1	Apr-19	98434
	4	73.1	102.6	12.9	1882	331	86	56	58	N/A	No.2	Apr-19	98434
	5	71.8	101	12.3	1787	320	87	56	58	N/A	No.3		
	6	74.6	104	13.3	1933	340	87	56	58	N/A	No.4		
	7	74.9	102.5	13.1	1912	331	87	56	58	N/A	Air cooler last cleaned SW/Air		
											No.1	Apr-19	
											No.2	Apr-19	
											No.3		
											No.4		
											Frequency of washing		
											Blower side		every 3rd day
											Turbine side		every 3rd day
	Average MEP		IHP		BHP		% Loading				FO consp (MT / Day)		63.8

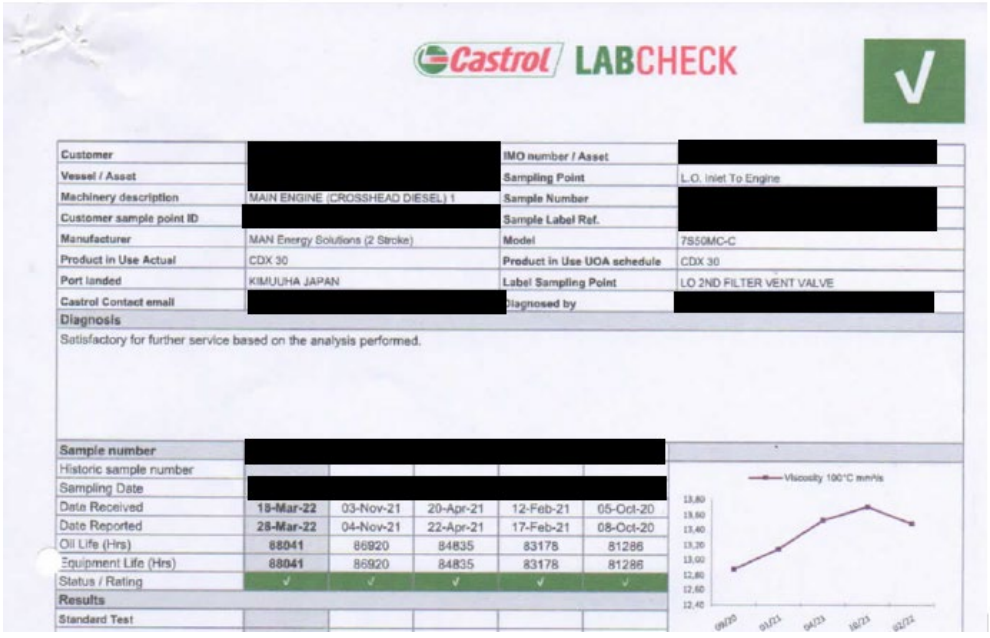
Latest Auxiliary Engine(s) Performance Report

The latest Auxiliary Engine Performance reports should be collected or photographed on board and reviewed with any noted discrepancies raised with the crew. Some smaller Aux. Engines are not designed to have regular performance tests and therefore the recording of key parameters is not possible. 4-stroke engines have four strokes: combustion, exhaust, suction and compression. Because these engines turn at a higher speed it is not usually possible to get a graph of the pressures in the cylinder over time, therefore it is common to only measure the maximum pressure (Pmax) as well as exhaust temperature, cooling water temperatures etc. Sometimes, for smaller 4 stroke engines, parameters such as output power, exhaust temperatures, engine speed and governor position are measured (no pressure measurements) and these are compared against performance curves, which are graphs of these parameters at different loads provided by the manufacturer. You can then determine the pressures, if you want, from these curves. They are essentially “perfect” parameters, and the engine performance is ascertained by determining how far from these “perfect” curves the engines deviates.

Latest lube oil analysis report for all relevant machinery

Lube Oil (LO) analysis is a laboratory test of the lube oil properties, suspended contaminants and wear debris. Lube Oil analysis should be performed as part of routine maintenance to provide meaningful and accurate information on lubricant and machine condition. By tracking the oil analysis sample results over the lifetime of a particular machine, trends can be established which can eliminate costly repairs or provide evidence of faults, excessive wear or other operating issues. It is recommended that as a minimum Lube Oil samples from critical machinery items are sent ashore for analysis at intervals not exceeding 3 months. Samples from less critical machinery can be sent at intervals not exceeding 6 months

A full set of the most recent Lube Oil analysis reports should be obtained on board. If only hard copies are provided, then legible photographs should be taken of the latest set of reports. The date of the most recent Lube Oil analysis reports should be checked for each machinery item. If the last samples sent for analysis are over 6 months old, then this item should be discussed with the crew in order to identify the reason for the overdue sampling. Next, the reports should be checked for Alerts and Caution notices. If any Alert or Caution notices were issued for the latest set of reports, then each item should be discussed with the crew on board in order to to verify that remedial action has been taken to improve the L.O. in use or investigate the cause of the Alert or Caution. Finally, in the Idwal Inspection checklist, a summary of each Alert or Caution should be given for each item issued with a summary of the action taken by the crew to improve the L.O. in use, if any has been taken.



Castrol LABCHECK

Customer	[redacted]	IMO number / Asset	[redacted]
Vessel / Asset	[redacted]	Sampling Point	L.O. Inlet To Engine
Machinery description	MAIN ENGINE (CROSSHEAD DIESEL) 1	Sample Number	[redacted]
Customer sample point ID	[redacted]	Sample Label Ref.	[redacted]
Manufacturer	MAN Energy Solutions (2 Stroke)	Model	7S50MC-C
Product in Use Actual	CDX 30	Product in Use UOA schedule	CDX 30
Port landed	KIMUUHA JAPAN	Label Sampling Point	LO 2ND FILTER VENT VALVE
Castrol Contact email	[redacted]	Diagnosed by	[redacted]

Diagnosis

Satisfactory for further service based on the analysis performed.

Sample number	[redacted]				
Historic sample number					
Sampling Date	[redacted]				
Date Received	18-Mar-22	03-Nov-21	20-Apr-21	12-Feb-21	05-Oct-20
Date Reported	28-Mar-22	04-Nov-21	22-Apr-21	17-Feb-21	08-Oct-20
Oil Life (Hrs)	88041	86920	84835	83178	81286
Equipment Life (Hrs)	88041	86920	84835	83178	81286
Status / Rating	✓	✓	✓	✓	✓
Results					
Standard Test					

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Speed and Consumption data including weather and load condition

Most vessel's maintain a record of the Fuel Consumption data which is often maintained as a daily log. This should be collected, as it allows our clients to verify the Speed and Consumption data provided within the inspection checklist and helps to get an overview of likely operating costs and how a vessel has been performing in comparison to vessels of a similar type, size and age. The surveyor should spot check the data and if it varies significantly from the Speed and Consumption data provided on the Pre-Inspection Details or entered into the inspection checklist, then the figures should be queried with the Chief Engineer to get as accurate information as possible for the inspection checklist Consumption Data.

Inventory of Critical Spares

An Inventory of Critical Spares is an ISM requirement. An Inventory should be maintained within the vessel's Safety Management System. A vessel should have identified a set of required spares for safety critical equipment. Safety Critical equipment can be described an individual piece of equipment, a control system or an individual protection device which in the event of a single point fault may:

- Result in a hazardous situation which could lead to an accident.

Or

- Directly cause an accident that results in harm to people or the environment.

The identification of safety critical equipment should be in an easy-to-understand format. A summary of all safety critical equipment with the required spares to be carried should be available in a list or matrix format. In a computerised PMS, safety critical equipment and spares may be provided with computer-searchable tags.

The inventory of critical spares should be inspected on board. It should be verified that the inventory is up to date and being maintained. Often when new equipment, such as Ballast Water Treatment System or Exhaust Gas Cleaning System are retrofitted, the inventory is not updated to reflect the new spares required for the new machinery. Any shortfalls on the critical spares inventory must be highlighted in the Idwal inspection checklist.. The crew should be question to verify the status of any missing items.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

IMO DCS or EU-MRV data for the last year; Fuel Consumption & Distance Travelled

Amendments to MARPOL Annex VI require ships of 5,000 gross tonnage and above to collect consumption data for each type of fuel oil they use. The aggregated data is reported to the Flag State after the end of each calendar year. The Flag State will review the data and issue a Statement of Compliance if it has been reported in accordance with the requirements.

We require the summary of the collected consumption data for the proceeding 3 years, as we need it to estimate a vessel's Carbon Intensity Indicator (CII). The CII is a calculated score of a vessel's operational efficiency in terms of the total carbon output per ton-mile of cargo carried. It is calculated from the vessel's speed, distance and consumption figures provided to the IMO Data Collection Service (DCS) every year and is measured in grams of CO2 per ton-nautical mile (gCO2/t.Nm). An estimated CII score can also be collected from data submitted as part of EU-MRV.

Electronically published by ABS Singapore.
Reference T2087048, dated 19-FEB-2021.

ABS

CERTIFICATE NUMBER: T2087048

Statement of Compliance –
Fuel Oil Consumption Reporting

Issued under the provisions of the Protocol of 1997, as amended, to amend the International Convention for the Prevention of Pollution by Ships, 1973, as modified by the Protocol of 1978 related thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

Kingdom of Belgium

by **American Bureau of Shipping**

Ship Type	BulkCarrier
Gross Tonnage	23432
Net Tonnage	10758
Deadweight (mt)	33687
Main propulsion power output (kW)	8580.0
Auxiliary engine(s) power output (kW)	650,650,650
EEDI	N.A
Ice Class	N.A
Distance travelled (nm)	42684
Hours underway (hrs)	3433
Quantity of diesel/ gas oil consumed (mt)	1420
Quantity of LFO consumed (mt)	1137
Quantity of HFO consumed (mt)	1445.0
Quantity of LPG (Propane) consumed (mt)	N.A
Quantity of LPG (Butane) consumed (mt)	N.A
Quantity of LNG consumed (mt)	N.A
Quantity of Methanol consumed (mt)	N.A
Quantity of Ethanol consumed (mt)	N.A
Quantity of Other Fuel consumed (mt)	N.A
Method used to measure fuel oil consumption	FlowMeter

EU-MRV operates in a similar way to IMO DCS, with requirements for the monitoring, reporting and verification of carbon dioxide (CO2) from ships greater than 5000GT arriving at, within or departing from EU ports and/or European Economic Area ports.

The key information we require in this document is the distance travelled in nautical miles and the total consumption of fuel which will usually be Heavy Fuel Oil, Light Fuel Oil or Diesel Oil. There is a requirement for the information submitted to IMO DCS to be audited by a Recognized Organization, who after auditing and verifying the figures, will issue a "Statement of Compliance –Fuel Oil Consumption Reporting" which will summarise the distance travelled in nautical miles and the total consumption of fuel for a given year. Please note that any general document of IMO DCS compliance that does not contain the distance travelled in nautical miles and the total consumption of fuel for a given year is not what we require and is of little use to us or our client.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

EEDI / EEXI Technical File

The EEXI is a calculated score of a vessel's design efficiency in terms of the total carbon output per ton-mile of cargo carried. It is calculated using an algorithm defined by the IMO and is measured in grams of CO2 per ton-nautical mile (gCO2/t.Nm). A vessel's Attained EEXI is calculated based on the vessel's size, propulsion power, design and technology features. This Attained EEXI must be below the Required EEXI as calculated based on the vessel's type and size.

Vessels built after 2016 are required to have their EEXI value calculated during build, where this score is known as the EEDI. If a vessel has an EEDI score, this value is taken as the vessel's current Attained EEXI.

A vessel must achieve an Attained EEXI lower than the Required EEXI, construct an EEXI Technical File and have it verified by the first renewal of the International Air Pollution Prevention (IAPP) certificate after the 1st January 2023.

The EEDI/EEXI Technical File includes the calculation of the attained EEDI/EEXI which must be below a required value.

NOx Technical File for Main and Aux engines showing SFOCs corrected to ISO conditions

It is extremely important that the following Specific Fuel Oil Consumption (SFOC) figures are accurately recorded in the Idwal inspection checklist:

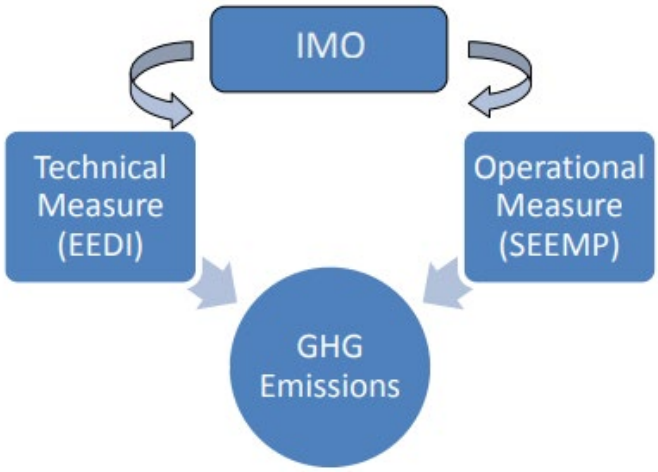
- Main engine at 75% load, ISO corrected
- Aux engines at 50% load, ISO corrected

The required figures are often found in the NOx technical files for the engines which should be collected so that our clients and internal technical team can possible verify the required SFOC figures.

Ship Energy Efficiency Management Plan

The Ship Energy Efficiency Management Plan (SEEMP) is an operational measure that establishes a mechanism to improve the energy efficiency of a ship in a cost-effective manner. The SEEMP also provides an approach for shipping companies to manage ship and fleet efficiency performance over time using, for example, the Energy Efficiency Operational Indicator (EEOI) as a monitoring tool. The guidance on the development of the SEEMP for new and existing ships incorporates best practices for fuel efficient ship operation, as well as guidelines for voluntary use of the EEOI for new and

existing ships (MEPC.1/Circ.684). The EEOI enables operators to measure the fuel efficiency of a ship in operation and to gauge the effect of any changes in operation, e.g. improved voyage planning or more frequent propeller cleaning, or introduction of technical measures such as waste heat recovery systems or a new propeller. The SEEMP urges the ship owner and operator at each stage of the plan to consider new technologies and practices when seeking to optimise the performance of a ship.



A SEEMP is to be available onboard during the first renewal or intermediate survey on or after 1st January 2013 and is mandatory for all ships of 400 GT and above.

Last Ballast tank inspection reports and photographs

In addition to inspecting a selection of the vessel's ballast tanks, it is imperative that recent inspection photographs and inspection reports are provided by the crew. This will give a complete overview of the condition of the vessel's ballast tanks. The date of the photos should be verified and entered in the Idwal inspection checklist. Include a comment if the photograph and / or report are more than 12 months old.

The photographs and inspection reports for the Ballast Tanks should be reviewed on board in order to make a condition assessment of the Tanks based on the evidence provided. Consider that some ballast tanks may show more deterioration than others, for example, a Double Bottom Tank is likely to be in worse condition than a Top Side Tank. Aft Peak and Fore Peak tanks are more likely to have suffered localised structural damage due to their position. Any reported damage must be fully investigated during your inspection.

Please endeavour to collect as wider sample of photos and inspection reports of the Ballast Tanks as possible. If the file sizes are too big to be uploaded to the Surveyor Portal, then please use Drop Box or another method to e-mail the full sample of Ballast Tank photos or inspection reports to us, so that we can make them available to our Client.

Latest Cargo Hold/Tank inspection report and photographs

It is imperative that recent cargo hold / tank inspection reports and photographs are provided. This should be in addition to your own inspection of the vessel's cargo holds / tanks. The date of the report and photographs provided should be verified and entered in the inspection checklist and a comment should be made if the report or photographs provided by the crew are older than 12 months old, as the condition of the tanks or holds may have changed.

The reports and photographs provided for the Cargo Tanks or Holds should be reviewed on board in order to make a condition assessment based on the evidence provided. If a sample of Cargo Holds and Tanks are entered for inspection on board, the recent inspection report and photographs provided by the crew should be reviewed in order to compare the condition of the Holds or Tanks as seen on board and as reported by the crew. Furthermore, Cargo Holds and Tanks may have localised structural damages or issues which may be reported in inspection reports or seen in the photos provided of Tanks.

Please endeavour to collect as wider sample of photos and inspection reports of the Cargo Tanks or Holds as possible. If the file sizes are too big to be uploaded to the Surveyor Portal, then please use Drop Box or another method to e-mail the full sample of photos or inspection reports to us, so that we can make them available to our Client.

Last Dry Dock Superintendent Report

The last Dry-Docking report contains pertinent information regarding the location, scope of work and results of required tests and inspections completed during the last dry-docking. If the last Dry-Docking report is not available on board in soft copy, then the hard copy should be reviewed and the scope of work completed should be summarised in the relevant section of the Idwal inspection checklist. It is recommended that important sections of the Dry-Docking report are scanned or photographed and uploaded to the documents section of the Idwal Portal if only a hard copy is available for review.

UTM Measurements

The IACS minimum requirements for UTM measurements at Special Surveys are provided below. The UTM report is very important, as diminution of steel is probably the biggest risk factor for owners and technical managers and steel renewals are one of the most significant CAPEX costs. Note that there are no requirements for vessels less than 10 years old to have UTMs unless suspect areas have been identified. It should also be noted that there are additional UTM requirements for vessel's on the Enhanced Survey programme (ESP):

Special Survey No.1 Age ≤ 5	Special Survey No.2 5 < Age ≤ 10	Special Survey No.3 10 < Age ≤ 15	Special Survey No.4 and Subsequent 15 < Age
1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.	1) Suspect areas throughout the vessel.
	2) One transverse section of deck plating in way of a cargo space within the amidships 0.5L	2) Two transverse sections within the amidships 0.5L in way of two different cargo spaces.	2) A minimum of three transverse sections in way of cargo spaces within the amidships 0.5L.
		3) All cargo hold hatch covers and coamings (plating and stiffeners).	3) All cargo hold hatch covers and coamings (plating and stiffeners).
		4) Internals in forepeak and afterpeak ballast tanks.	4) Internals in forepeak and afterpeak ballast tanks.
			5) All exposed main deck plating full length.
			6) Representative exposed superstructure deck plating((poop, bridge, and forecastle deck).
			7) Lowest strake and strakes in way of 'tween decks of all transverse bulkheads in cargo spaces together with internals in way.
			8) All wind – and water strakes, port and starboard, full length.
			9) All keel plates full length. Also, additional bottom plates in way of cofferdams, machinery space, and aft end of tanks.

Different classification societies report UTM in different formats. Please see an example of an unfilled page from a UTM report:

TM1-G **Report on THICKNESS MEASUREMENT of ALL DECK PLATING, ALL BOTTOM SHELL PLATING or SIDE SHELL PLATING*** (* - delete as appropriate) **Sheet 4**

Ship's name..... Class Identity No. ..... Report No. .....

STRAKE POSITION / PLATE POSITION	No. or Letter	Org. Thk. mm	Forward Reading Gauged P	Forward Reading Gauged S	Forward Reading Diminution P mm	Forward Reading Diminution P %	Forward Reading Diminution S mm	Forward Reading Diminution S %	Aft Reading Gauged P	Aft Reading Gauged S	Aft Reading Diminution P mm	Aft Reading Diminution P %	Aft Reading Diminution S mm	Aft Reading Diminution S %	Mean Diminution % P	Mean Diminution % S	Maximum Allowable Diminution mm
12th forward																	
11th																	
10th																	
9th																	
8th																	
7th																	
6th																	
5th																	
4th																	
3rd																	
2nd																	
1st																	
Amidships																	
1st aft																	
2nd																	
3rd																	
4th																	
5th																	
6th																	
7th																	
8th																	
9th																	
10th																	
11th																	
12th																	

Operators Signature..... NOTES – See Reverse

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

UTM reports are usually very lengthy and sometimes the report is only available as a hard copy on board. A review of the UTM report should be conducted and a brief summary provided of any suspect areas as well as the general level of diminution recorded. There is no requirement to perform an in-depth analysis of the UTM report, only a cursory check of the summary page of any areas of excessive diminution.

Document of Compliance (DOC) for the Carriage of Dangerous Goods (Dry Cargo only)

A Document of Compliance for Carriage of Dangerous Good is required by vessels intended, or which have cargo spaces which are intended for, the carriage of dangerous goods on international voyages. It certifies that the construction and equipment on a vessel have been found to comply with the provisions of Regulation II-2/19 of the International Convention for the Safety of Life at Sea (SOLAS, 1974, as amended. The appendix of the certificate will state which class of dangerous goods can be carried by the vessel. The requirements that the vessel must meet for the carriage of the different classes of dangerous goods are laid out in the International Maritime Dangerous Goods (IMDG) Code and the Code of Safe Practice for Solid Bulk Cargoes (IMSBC) Code. Dangerous goods are those substances and articles, carried as cargo, which are listed or classified in the latest edition of the International Maritime Dangerous Goods (IMDG) Code. Items of Class 6.2 (Infectious substances), Class 7 (Radioactive substances) and dangerous goods carried within the specified limited quantities do not require a DOC to be carried.

The DOC is made of the main certificate, Schedule 1 and Schedule 2. Schedule 1 contains a simple layout diagram of a ship and a table. The table shows which Dangerous Goods Classes can be carried in each cargo space. Schedule 2 contains what provisions are required to carry the Dangerous Goods specified in Schedule. The additional items detailed in Schedule 2 may include:

- Immediate availability of water
- Quantity of water
- Water spray system
- Cargo space flooding
- Electrical arrangements
- Fire detection system
- Power ventilation
- Bilge pumping
- Protective clothing
- Fans
- Breathing apparatus
- Fire extinguishers

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

To get a Document of Compliance for carriage of Dangerous Goods, a vessel will be subject to an Initial Survey, Annual Survey (Usually completed in conjunction with the Safety Construction or Equipment Certificate Surveys) and a Renewal Survey.

A surveyor should check the Original Document of Compliance for Carriage of Dangerous Goods on board a vessel is valid with no overdue surveys. A short-term DOC Certificate may be issued due to a known defect for which a Condition or dispensation has been issued. If a short-term certificate is issued, the grounds should be properly investigated in as much detail as possible and reported within the relevant section of the inspection checklist. DOC Certificates may also be issued with stated exemptions which are accepted deviations from the applicable requirements that have been accepted by the issuing Flag State or Recognised Organisation. Any pertinent exemptions should be highlighted within the inspection checklist.

Last Cargo Crane Rocking Tests Report (geared vessels only)

Rocking tests of deck cranes are carried out to ascertain the wear down of the sleeve bearing (also known as the slewing bearing or turn table bearing) of the deck cranes by measuring the play (relative movement) between the inner and outer bearing race. This measurement indicates the rate of wear. The Rocking Test needs to be carried out according to manufacturer recommendations. To ensure that slewing ring bearings are not becoming worn, the vessel's Planned Maintenance System should include a rocking test, and each crane should be tested every 6 months. A record of these tests must be entered into the Registry of Lifting Appliances.

The rocking test comprises of measuring the deflection between the crane pedestal and the rotating crane housing in the way of the slewing ring using a dial test indicator to determine the bearing clearances. Measurements are taken at the two locations on the slewing ring susceptible to the most significant bearing wear, under the jib's centre and diametrically opposite. A set of eight readings are taken with the crane pointing dead ahead, dead astern, to port and then to starboard, initially with the jib luffed to its minimum radius with no weight on the hook and then with the jib luffed to its maximum radius with the difference between the two readings giving the bearing clearance.

Measurement (accuracy 0.1 mm)			Play	Jib direction
Jib at max. outreach		Jib at min. outreach		
A (front of crane)	**B** (back of crane)	**C** (back of crane)	B - C	
				Fore
				Stb
				Aft
				Ps

The readings are compared against the manufacturer's maximum permissible clearance, which will depend on the type and size of the slewing ring and bearing size. The original bearing clearances should be available to determine the degree of wear. A vessel may reduce the testing intervals if the wear has

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

increased appreciably during tests. Common limits include 1.5mm for roller bearings and 3.0mm for ball bearings.

It should be verified on board that regular Crane Rocking tests are being carried out . If wear is outside the permissible limit, then, then the bearing will likely need to be replaced which is costly and if the life time of the wear is pre-mature then the reason for the same needs to be investigated. If the wear is close or on the limits, operating the cranes less than the max SWL and hoisting with the extended jib may need to be restricted which is significant. If no evidence of rocking tests are available on board, Class can restrict the use of the cranes.

OCIMF HVPQ (Tankers only)

The Harmonised Vessel Particulars Questionnaire (HVPQ) is managed by the Oil Companies International Marine Forum (OCIMF). The HVPQ is an optional part of the Revised SIRE Programme. The objective of the HVPQ is to make available to SIRE Programme Recipients and attending ship Inspectors; detailed ship information from a single computer-based source. The compilation of this information is made by ship Operators and entered into a specialised HVPQ computer Application.

Ships participating within the SIRE Programme will have a HVPQ. The information provided within the HVPQ is provided by vessel's operators and therefore may have discrepancies or mistakes. The HVPQ should be regularly updated and contains pertinent information relating to General Ship Information, Statutory Requirements, Certification, Structural Dimensions, Construction, Equipment and Inventory. Such information is generally of a permanent or semi-permanent nature primarily relating to safety and pollution prevention.

The HVPQ can provide a surveyor with useful information about a vessel, particularly the Cargo System arrangement on tankers. Information included within the HVPQ includes:

- The number and arrangement of Cargo Tanks.
- The number Cargo Grades a vessel can carry.
- If the Cargo Tanks are Fully Coated, Coated on the top and bottoms, Stainless Steel, Uncoated or Coated by some other means.
- The Cargo Heating Arrangements (Coils or Heat Exchangers).
- The type of Cargo Pumps fitted.
- The Cargo Stripping Arrangements.
- The Crude Oil Washing or Tank Washing arrangement
- Type of Inert Gas System fitted.
- Whether the vessel is fitted with a Mast Riser.
- The date of the last SIRE inspection.
- The latest Condition Assessment Program (CAP) rating, if applicable

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Latest SIRE inspection report (Tankers only)

The industry-agreed Oil Companies' International Marine Forum (OCIMF) Ship Inspection Report Programme (SIRE) inspection format is used as the main ship inspection tool for most tanker vessel charterers. SIRE inspections, sometimes known as 'vetting inspections' are carried out by oil majors on tanker vessels to ascertain whether vessels are well managed and maintained, thereby addressing concerns about sub-standard shipping. It is one of the most significant safety initiatives introduced by OCIMF. The SIRE Programme is a unique tanker risk assessment tool of value to charterers, ship operators, terminal operators and government bodies concerned with ship safety.

Inspection reports are maintained on the index for a period of 12 months from the date of receipt and are maintained on the database for 2 years. SIRE inspections are done usually at 6 monthly intervals with a list of observations provided to the Master. Commonly, vessels with SIRE inspection findings cannot be used by a charterer such as an oil major until all observations have been closed-out and the vessel is found suitable for operations by a vetting and clearance superintendent. Therefore, it is important to ascertain important is ascertain when the last SIRE inspection was conducted, what were the observations and whether these observations have been closed out. Observations are usually highlighted in red if the full SIRE report is provided or a simple tabular list of observations will be provided. If any observations are still open, the reason and status of the open observation should be verified and reported in the Idwal inspection checklist in as much detail as possible.

OCIMF

Oil Companies International Marine Forum

SIRE Programme

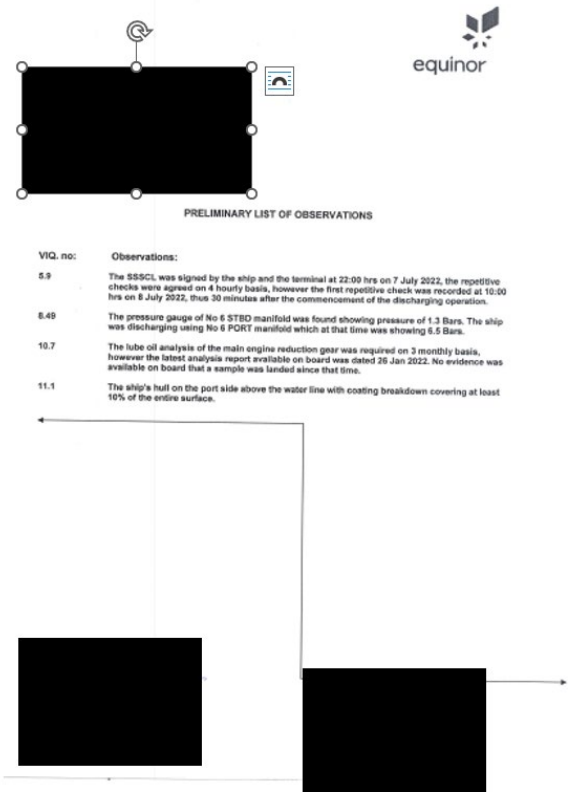
Harmonised Vessel Particulars Questionnaire v5

[redacted]

19 July 2022

DISCLAIMER

OCIMF DOES NOT WARRANT OPERATOR IDENTITY AND IS NOT RESPONSIBLE FOR THE CHOICE OF SHIPS INSPECTED, THE INSPECTORS CHOSEN, THE PERFORMANCE OF THE INSPECTIONS OR THE CONTENT OF THE REPORTS, OPERATOR COMMENTS AND/OR VESSEL PARTICULAR QUESTIONNAIRE RESPONSES DISTRIBUTED UNDER THE REVISED PROGRAMME. OCIMF IS INVOLVED ONLY IN THE RECEIPT, ORGANISATION AND DISTRIBUTION OF THE FOREGOING PROGRAMME OUTPUT. OCIMF DOES NOT REVIEW OR EVALUATE SUCH OUTPUT AND EXPRESSES NO OPINION CONCERNING ITS ACCURACY. WHILE OCIMF MAKES EVERY EFFORT TO ENSURE THAT PROGRAMME OUTPUTS ARE RECEIVED, ORGANISED AND DISTRIBUTED IN ACCORDANCE WITH THE SIRE COMPOSITE GUIDELINES, OCIMF ACCEPTS NO LIABILITY FOR FAILURE TO DO SO.



equinor

[redacted]

PRELIMINARY LIST OF OBSERVATIONS

VIQ. no:	Observations:
5.9	The SSSCL was signed by the ship and the terminal at 22:00 hrs on 7 July 2022, the repetitive checks were agreed on 4 hourly basis, however the first repetitive check was recorded at 10:00 hrs on 8 July 2022, thus 30 minutes after the commencement of the discharging operation.
8.49	The pressure gauge of No 6 STBD manifold was found showing pressure of 1.3 Bars. The ship was discharging using No 6 PORT manifold which at that time was showing 6.5 Bars.
10.7	The lube oil analysis of the main engine reduction gear was required on 3 monthly basis, however the latest analysis report available on board was dated 26 Jan 2022. No evidence was available on board that a sample was landed since that time.
11.1	The ship's hull on the port side above the water line with coating breakdown covering at least 10% of the entire surface.

[redacted]

[redacted]

The following documents will be required to be reviewed on board as part of the checklist. The list is sent to the vessel along with the list of documents to collect in soft copy, allowing the vessel to prepare the documents for your arrival, making the survey process faster and easier. There is no need to collect a copy of these documents. They must be checked during the inspection though.

Drugs and Controlled Substances List.

Usually found within the Hospital, it is a list of medicines, medical supplies and controlled substances which should be maintained on board. The list should be regularly updated and contain, for each item, the following information: expiry date, storage conditions, quantities remaining after purchase or use and disposal information. The medicine chest shall be inventoried at least once a year.

All vessels shall stock their medicine chests so that the inventory (types, dosage and quantities of medicines, medical supplies and equipment) is appropriate to the particular vessel's route, operation and number of persons on board. The contents of a ship's medical chest is not mandated through any international standard, except for ship's carrying dangerous goods. However, most Flag States will have mandatory requirements for medical equipment to be carried on board.

Controlled drugs are drugs that are graded according to the harmfulness attributed to the drug when it is misused. They are categorised into 3 categories: Class A includes heroin, morphine, and opium; Class B includes barbiturates and codeine; Class C includes, among other drugs, anabolic steroids.

The Drugs and Controlled substance list should be reviewed on board. Any shortfalls of required medicines should be interrogated and reported if requisitions for the missing items have not been raised. It is recommended to spot check a sample of medicines to ensure the list is accurate and up to date. Special attention should be paid to any expired medicines listed.

Compass Deviation Card and Log

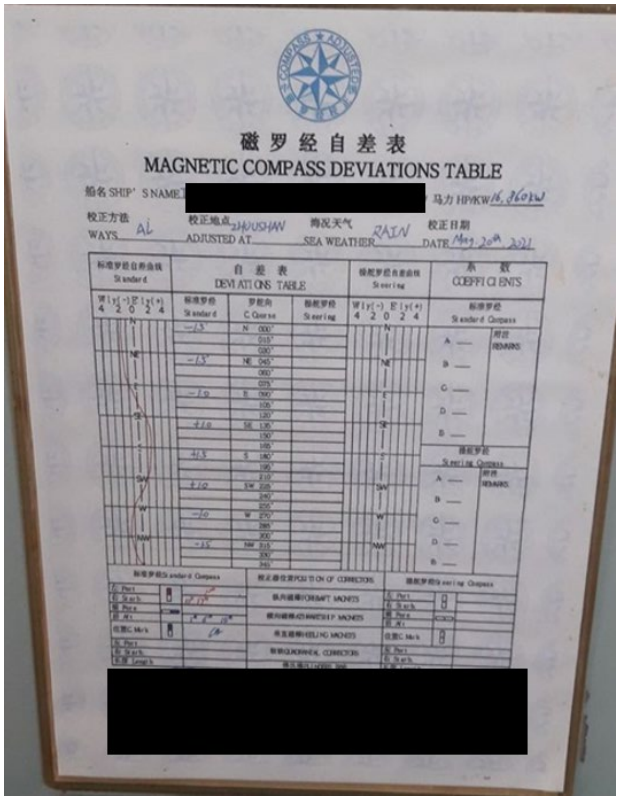
SOLAS V/19.2.1. states that all ships, irrespective of size, shall have "a properly adjusted standard magnetic compass." Regulation 19 also requires all vessels of 150 gross tons and over to carry a spare magnetic compass. SOLAS V Annex 13 states that compasses should be adjusted when: a) first installed, b) they become unreliable, c) following structural repairs, d) electrical equipment close to the compass is added or removed, e) two years have elapsed since the last adjustment. Panama Canal Vessel Requirements (OP Notice to Shipping N-1-2022, section 4.k on p.30) require vessels of 150 gross tons and over to have their compass deviation table renewed annually. Residual deviation

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

of the magnetic compass must be less than 7 degrees, and this must be verified by a "recognized calibration authority", and an accurate deviation table issued, within the previous 12-month period.

The performance of the magnetic compass should be monitored and deviations are to be recorded in a compass deviation book at regular intervals (Ref: IMO Resolution A.382(X)), ideally at least once every watch and also shortly after a large alteration of course. If the observations for a magnetic compass on a vessel show a deviation of the compass on any heading of more than 5 degrees, the compass should be adjusted by a qualified compass adjuster or the master of the vessel to correct the deviation.

The latest compass deviation card should be inspected with special attention paid to the date of the last compass swing. It should be noted that there is no requirement for the compass to be swung and adjusted by a qualified compass adjuster meaning the Master may carry out the swing and adjust the compass though many Maritime Authorities recommend that the compass adjustment be checked by a qualified compass adjuster at the next available opportunity. The compass error log book should be reviewed to ensure that the compass deviation is being recorded regularly (ideally at least once every watch and also shortly after a large alteration of course). If, due to weather conditions, the compass deviation cannot be recorded for a full day then it is advised that an entry should be made within the Bridge and compass error log book stating as much. The recent recorded deviations on a number of different headings should be checked and compared to the latest compass deviation card. If there are significant deviations then the reason why should be investigated. It should be noted that carrying cargoes which have magnetic properties can affect the deviation and therefore vessel's carrying certain goods including containers often have excessive deviations.



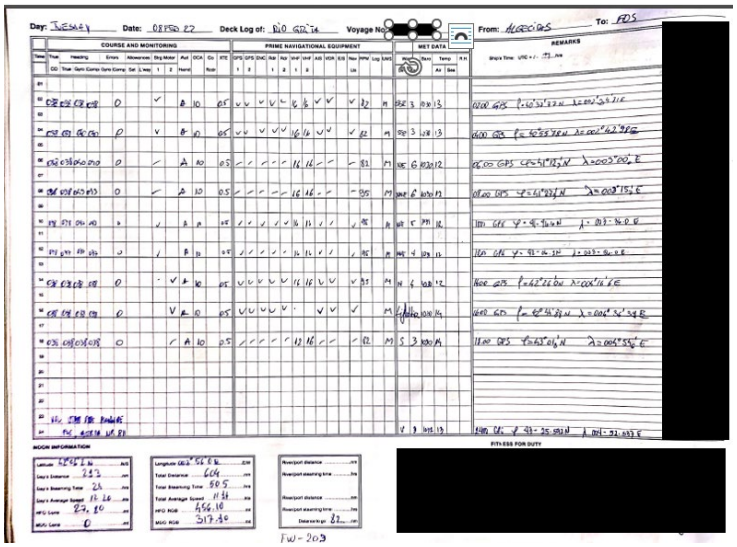
Bridge Logbook

The Bridge Logbook is used to record various data, scenario, and situations (including emergency situation and action) which are later used for reference, case study and for marine insurance purpose in case of damage to the ship or loss of ship's property.

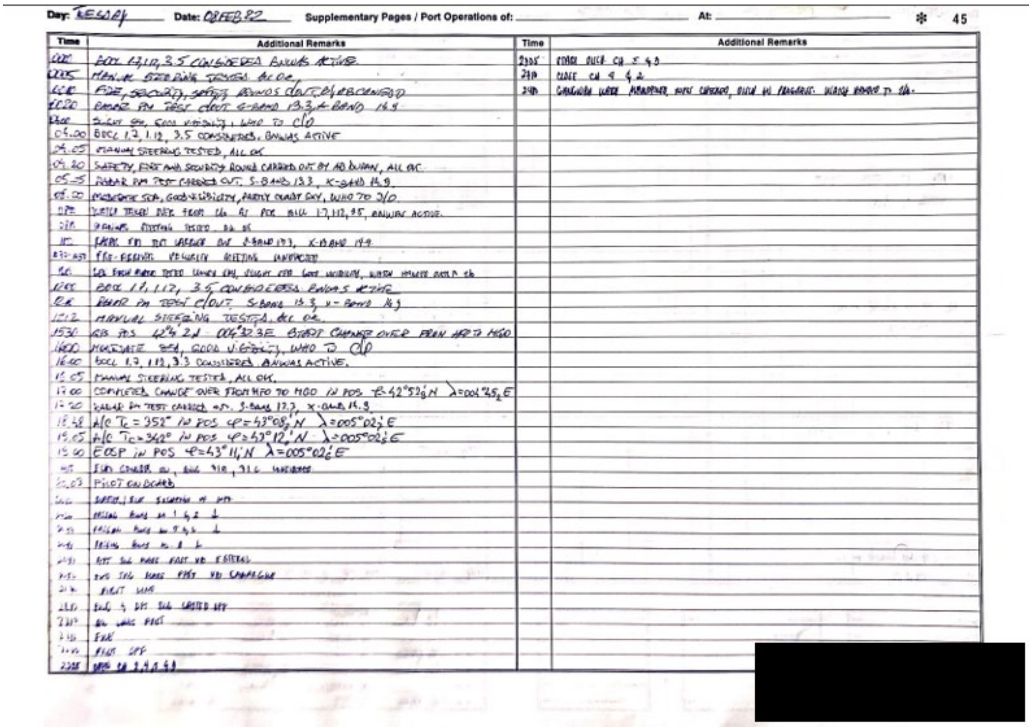
The Bridge Logbook contains lots of information useful to a surveyor. You will usually find the following entries within the Logbook:

- The position of the ship in Latitude and Longitude at different intervals
- Time when navigation marks are passed
- Time, details and reason if there is any course alteration
- Meteorological and weather conditions including details of sea, swell, etc, along with the Beaufort scale that is prevalent
- Movement of the ship at sea including rolling, pitching, heaving, etc
- Details of any abnormal condition
- Speed of the propulsion engine and speed of the ship in knots
- If involved in any kind of accidents like stranding, grounding etc. then details for the same
- Entry to be made if any physical contact with floating object or vessel is made
- Details of the distress signal received
- Entry for what kind of assistance is given to the distress signal sender
- If salvage operation is performed, complete details to be entered
- If there is an oil spill or other pollution accident, position of the ship, time and complete incident to be recorded
- Record of general watch routines performed including fire watch or safety rounds
- Time of arrival and departure and ETA.
- Drills and training carried out as well as inspections with regard to stowaways and security-related measures
- Record of stores, fresh water, etc. received

The Bridge Logbook should be reviewed in order to assess the vessel's recent operational history. Special attention should be paid to entries detailing incidents including stoppages or other incidents which may need additional investigation on board. Furthermore, the Logbook should be checked to ensure the log is being filled up in sufficient detail with accurate legible entries. No pages should be missing within the log and any corrections should be signed (initialed) by the responsible Officer.



☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com


Day: Date: Supplementary Pages / Port Operations of: At: 45

Time	Additional Remarks	Time	Additional Remarks
04.00	BOCC 1.7, 1.12, 3.5 CONSIDERED. BNWAS ACTIVE		
04.05	MANUAL STEERING TESTED, ALL OK		
04.20	SAFETY, FIRE AND SECURITY ROUND CARRIED OUT ... ALL OK		
1600	... GOOD VISIBILITY, WHO TO C/O		
16.00	BOCC 1.7, 1.12, 3.3 CONSIDERED. BNWAS ACTIVE.		
16.05	MANUAL STEERING TESTED, ALL OK.		
17.00	COMPLETED CHANGE OVER FROM HFO TO MGO IN POS		
18.48	A/C $T_c = 352°$ IN POS		
19.05	A/C IN POS		
19.00	EOSP IN POS		
20.03	PILOT ON BOARD		

[redacted]

GMDSS Logbook

The Global Maritime Distress and Safety System (GMDSS) Log must contain a summary of communications relating to distress, urgency and safety messages. The summary must include dates and times in Coordinated Universal Time (UTC), details of the vessels involved and their positions. Details of commercial communications exchanged via GMDSS communications equipment may also be recorded in the GMDSS Log.

The GMDSS Log should contain a record of important incidents connected with the radio service, for example:

- a breakdown or serious malfunction of the equipment;
- a breakdown of communications with coast stations, land earth stations or satellites;
- adverse propagation conditions, such as ionospheric, static, atmospheric noise or general interference;
- serious breaches of radio procedures by other stations;
- any incident connected with the radio service, which appears to be of importance to the safety of life at sea.

Tests and checks of equipment and reserve power at intervals specified by the equipment manufacturer must be entered into the Log. A summary of the operational capability of the equipment, together with the names of any station contacted during tests, should be recorded. If

any of the radio equipment is found not to be operating satisfactorily, the Master must be notified and details of the deficiencies recorded in the Log.

Records of daily, weekly and monthly tests should be verified within the Logbook. MF/HF DSC test calls to coast stations should be recorded in the Log. If the vessel has only been testing MF/HF DSC with ship stations then the reason for this should be verified. Records of the monthly tests should also be reviewed.

The GMDSS Log should be reviewed on board. It should be confirmed that the Log is being filled in sufficient detail and that all GMDSS equipment is operational and being properly tested.

Time (UTC)	Station From (Freq.,Ch.,Sat)	Station To (Freq.,Ch.,Sat)	Particulars of communication or remarks	Sign
0935-0940	3EAA2 / No.1VHF	Yokohama, Sea	Reported ETA 11230500 LT etc.	C/O
	Ch.16 / 14	Patrol Ch.16 / 14		
1005-1010	3EAA2 / 8379.5Khz	JNA / 8419.5 khz	Sent jasrep "SP"	C/O
1130-1140	JMH 18220 khz		Received Thyphoon warning (06Z)	C/O
1310-1315	Yamaguchi LES	3EAA2	Have been instructed medical treatment for crew from Tokio seamen´s hospital.	3/O
1325-1330	JNA / Navtex		Received urgent message "missing man". Copy attached.	3/O
1340-1349			(daily) MF / HF DSC Radio Equipment: Checked by means provided routing: all sat´ry	3/O
1356-1402			(daily) No.1 & No.2 Vhf Equipment with DSC: Checked by means provided routing: all sat´ry	3/O
1410-1420			(daily) D.S.C. Watch Keeping Receiver: ---------- do----------	3/O
1425-1435			(daily) Inmarsat- C with EGC: Checked by means provided Self Test: sat´ry	3/O
1440-1450			(daily) ON-LOAD & OFF-LOAD radio batteries test carry-out: sat´ry	
1805-1806	3EAA2	Yamaguchi LES	Sent OBS 18 Z	2/O
1810-1815	Navtex		Checked paper supplies in good conditions.	2/O
1820-1825			(weekly) No.1 & No.2 VHF Radio Equipment with DSC: Tested by only routing call: all sat´ry	2/O
1835-1840			(weekly) MF / HF Radio equipment with DSC: tested by special calling (auto mode) with JNA	2/O
			on 8Mhz: sat´ry	
1843-1858			(weekly) radio batteries tested using hydrometer: all sat´ry.	
1500-1900	No.1 VHF Ch.16 / 70		All nothing	2/O
1905-1908	3EAA2	Yamaguchi LES	Sent Amver (SP)	C/O
2005-2010			(monthly)Two way VHF (No.1 , No2 & No.3): tested by ch. 17 (or ch.1) in good order	C/O
2015-2022			(monthly) Radar transponder (No.1 & No 2): checked by in-built test facility: ok	C/O
2030-2035			(monthly) Inmarsat-C with EGC: checked by mean of actual communication with Yamaguchi	C/O
			Land Earth Station (LES): sat´ry	
2040-2058			(monthly) radio batteries checked for the security of each battery and its connection: all sat´ry	C/O
1900-2300	No.2 VHF Ch. 16 / 70		All nothing and changed to No.1 VHF	C/O

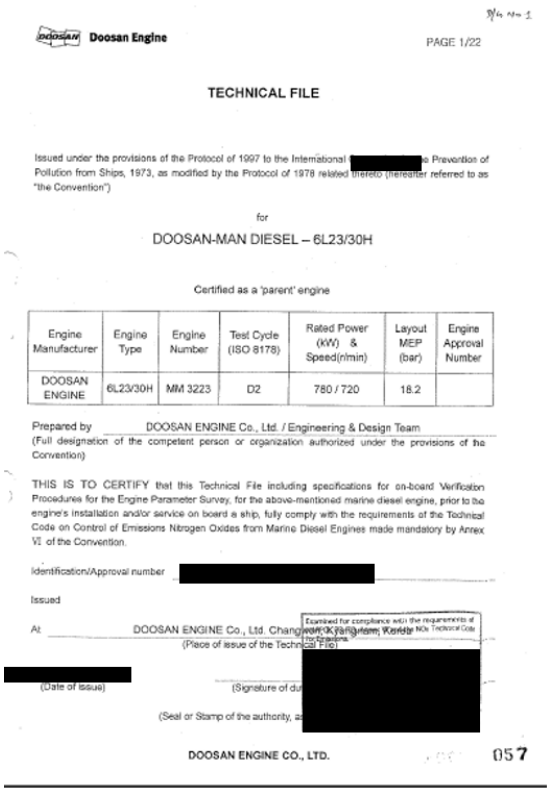
NOx Technical File

A NOx Technical File is a record containing all details of parameters, including components and settings of an engine, which may influence the NOx emission of the engine. It is required to be carried for all installed marine diesel engine of over 130kW output power, other than those used solely for emergency purposes, irrespective of the tonnage of the ship onto which such engines are installed. A NOx Technical File must be provided for engines installed after the 01-Jan-2000 or for an engine which has undergone a major conversion on or after the 01-Jan-2000.

It should be verified that NOx Technical Files are carried and maintained on board for all applicable engines. Descriptions of any changes effecting the designated engine parameters, including adjustments, parts replacements and modifications to engine parts, shall be recorded chronologically in the Record Book of Engine Parameters which should be maintained with the NOx Technical File. The changing of interchangeable parts which influence the NOx emissions performance, identified by their design/parts number, should be recorded with the design/part number clearly recorded.

Dependent on the specific design of the particular engine, different on board NOx influencing modifications and adjustments are possible and usual. These include the engine parameters as follows:

1. injection or ignition timing,
2. injection nozzle,
3. injection pump,
4. fuel cam,
5. injection pressure for common rail systems,
6. combustion chamber,
7. compression ratio,
8. turbocharger type and build,
9. charge air cooler, charge air pre-heater,
10. valve timing,
11. NOx abatement equipment "water injection",
12. NOx abatement equipment "emulsified fuel" (fuel water emulsion),
13. NOx abatement equipment "exhaust gas recirculation",
14. NOx abatement equipment "selective catalytic reduction", .15 other parameter(s) specified by the Administration, or
15. gas valve



Doosan Engine PAGE 1/22

TECHNICAL FILE

Issued under the provisions of the Protocol of 1997 to the International [redacted] Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 related thereto (hereafter referred to as "the Convention")

for

DOOSAN-MAN DIESEL – 6L23/30H

Certified as a 'parent' engine

Engine Manufacturer	Engine Type	Engine Number	Test Cycle (ISO 8178)	Rated Power (kW) & Speed(r/min)	Layout MEP (bar)	Engine Approval Number
DOOSAN ENGINE	6L23/30H	MM 3223	D2	780 / 720	18.2	

Prepared by DOOSAN ENGINE Co., Ltd. / Engineering & Design Team
(Full designation of the competent person or organization authorized under the provisions of the Convention)

THIS IS TO CERTIFY that this Technical File including specifications for on-board Verification Procedures for the Engine Parameter Survey, for the above-mentioned marine diesel engine, prior to the engine's installation and/or service on board a ship, fully comply with the requirements of the Technical Code on Control of Emissions Nitrogen Oxides from Marine Diesel Engines made mandatory by Annex VI of the Convention.

Identification/Approval number [redacted]

Issued

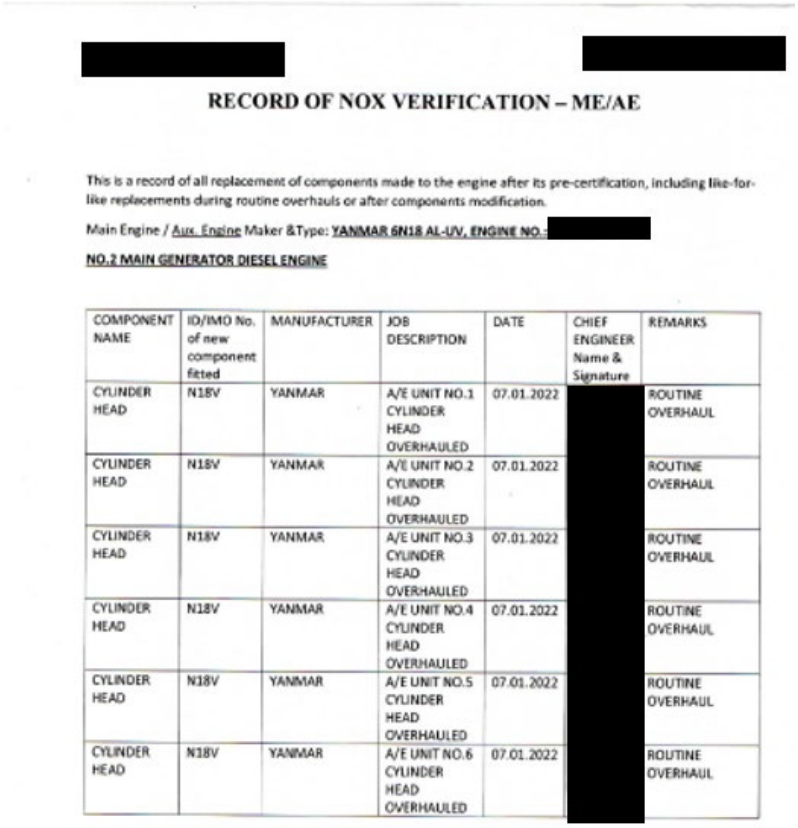
At DOOSAN ENGINE Co., Ltd. Changwon, Kyungnam, Korea
(Place of issue of the Technical File)

[redacted]
(Date of issue)

(Signature of du[redacted]

(Seal or Stamp of the authority, a[redacted]

DOOSAN ENGINE CO., LTD. 057



[redacted] [redacted]

RECORD OF NOX VERIFICATION – ME/AE

This is a record of all replacement of components made to the engine after its pre-certification, including like-for-like replacements during routine overhauls or after components modification.

Main Engine / Aux. Engine Maker &Type: **YANMAR 6N18 AL-UV, ENGINE NO.-** [redacted]

NO.2 MAIN GENERATOR DIESEL ENGINE

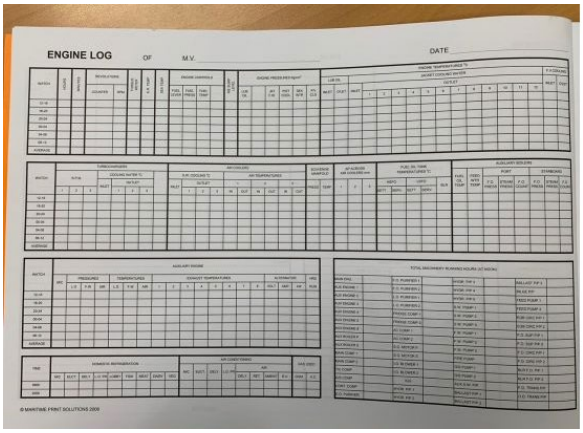
COMPONENT NAME	ID/IMO No. of new component fited	MANUFACTURER	JOB DESCRIPTION	DATE	CHIEF ENGINEER Name & Signature	REMARKS
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.1 CYLINDER HEAD OVERHAULED	07.01.2022	[redacted]	ROUTINE OVERHAUL
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.2 CYLINDER HEAD OVERHAULED	07.01.2022		ROUTINE OVERHAUL
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.3 CYLINDER HEAD OVERHAULED	07.01.2022		ROUTINE OVERHAUL
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.4 CYLINDER HEAD OVERHAULED	07.01.2022		ROUTINE OVERHAUL
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.5 CYLINDER HEAD OVERHAULED	07.01.2022		ROUTINE OVERHAUL
CYLINDER HEAD	N18V	YANMAR	A/E UNIT NO.6 CYLINDER HEAD OVERHAULED	07.01.2022		ROUTINE OVERHAUL

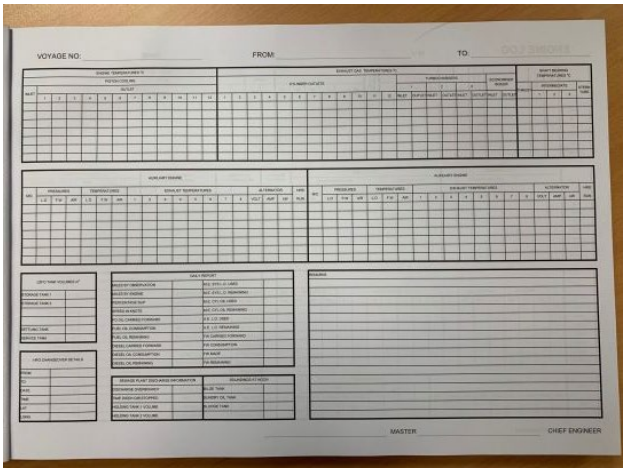
Engine Logbook

An Engine Logbook is a record of all ship machinery parameters, performance, maintenance, and malfunctions. The recorded values and information are used as a reference, to compare and record data that can be used as evidence. A responsible watch keeping Engineer has to fill up the Logbook for Their own watch period, along with the signature of all watch keepers for their concerned watch timings. The Chief Engineer also must countersign this book every day.

The Engine Logbook contains lots of information useful to a surveyor. It provides a record of the recent operational parameters and history of machinery on board. It should also show any recent issues, stoppages or malfunctions. It is recommended that the Engine Logbook is reviewed and any items of note raised with the on board crew. For example, if one of the Aux. Eng. has not been used for some time prior to the inspection, the reason for this should be clarified.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com





MSDS Data Sheets

Material Safety Data Sheets (MSDS), which are often referred to as Safety Data Sheets (SDS), are important documents in the safe supply, handling and use of chemicals. They help ensure that those who use chemicals in the workplace use them safely without risk of harm to users or the environment.

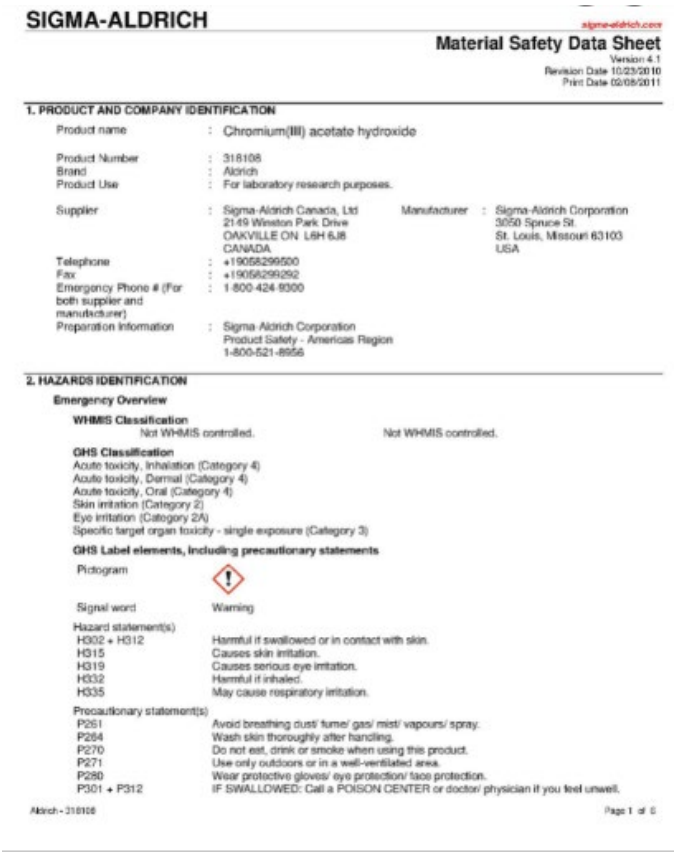
The MSDS will contain the information necessary to allow seafarers to do a risk assessment. MSDS will describe the hazards helping seafarers assess the probability of those hazards arising in the workplace.

MSDS are a must if a chemical is hazardous and is being supplied for use at work, whether in packages or not. MSDS are also required if a chemical is not classified as hazardous but contains small amounts of a hazardous substance.

MSDS are also required for cargoes carried under the IMDG Code and MARPOL Annex I, II and III. They are also required for all Fuel Oil and Lube Oil products carried.

It should be verified that the vessel has MSDS on board for all necessary products. Usually, MSDS are stored in files near the products so that they are readily available in an emergency. It should be verified that the MSDS are current, in date and are for the correct products carried. MSDS should be disposed of when the product is consumed though it is recommended that the MSDS for previous Cargo, Bunkers or L.O. products are maintained for a period after they are consumed or discharged as residual hazards may be present after they have been discharged within the spaces they were stored.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com



SIGMA-ALDRICH

sigma-aldrich.com

Material Safety Data Sheet

Version 4.1
Revision Date 10/23/2010
Print Date 02/08/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Chromium(III) acetate hydroxide

Product Number : 318108
Brand : Aldrich
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada, Ltd
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +19058299500
Fax : +19058299292
Emergency Phone # (For both supplier and manufacturer) : 1-800-424-9300
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification

Not WHMIS controlled. Not WHMIS controlled.

GHS Classification

Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)

H302 + H312	Harmful if swallowed or in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

Aldrich - 318108 Page 1 of 6

Permits To Work

The Permit to Work (PTW) system consists of an organised and predefined safety procedure. A Permit to Work does not in itself make the job safe, but contributes to measures for safe working.

Permits to Work would normally be required for the following categories of work:

- entry into dangerous (enclosed) space;
- any work requiring use of gas testing/equipment;
- hot work;
- working at height/over the side;
- general electrical (under 1000 volts);
- electrical high voltage (over 1000 volts);
- working on deck during adverse weather; and
- lifts, lift trunks and machinery.

This list is not exhaustive.

The Safety Management System (SMS) for individual ships will determine when a Permit to Work should be used. The SMS will also define how the Permits to Work should be recorded. It should be verified on board that a Permit to Work system is defined and effectively implemented. It is recommended that a surveyor checks that Permits to Work have been correctly used for recent activities, and any recent hazardous activities that do not have a documented Permit record should be raised within the relevant section of the Idwal inspection checklist. When checking recent Permits, the following should be considered:

- The Permit should be relevant and as accurate as possible. It should state the location and details of the work done, the nature and results of any preliminary tests undertaken, the measures undertaken to make the job safe and the safeguards that needed to be taken during the operation.
- The permit should specify the period of its validity (which should not exceed 24 hours) and any time limits applicable to the work that was authorised.
- Only the work specified on the Permit should have been undertaken.
- Before signing a Permit, the Authorised Officer should ensure that all measures specified as necessary have in fact been taken, or procedures are in place.
- The Authorised Officer retains responsibility for the work until they have either closed the Permit or formally transferred it to another Authorised Officer. A full handover should be provided between Authorised Officers in such circumstances. Anyone who takes over from the Authorised Officer, either as a matter of routine or in an emergency, should sign the Permit to indicate transfer of full responsibility.
- The competent person responsible for carrying out the specified work should countersign the Permit to indicate their understanding of the safety precautions to be observed.
- On completion of the work, the competent person should notify the Authorised Officer and get the Permit closed.
- The competent person carrying out the specified work should not be the same person as the Authorised Officer.

Permits are a critical part of any enclosed space entry. If Ballast Tanks or other enclosed spaces are to be inspected on board, the surveyor should check the relevant risk assessment and Permit to ensure that proper safe guards have been put in place to enable safe entry.

If a Permit or risk assessment has not been created, or a surveyor has any doubt that the procedures to make a space safe for entry are not sufficient or have not been followed, then they are to raise their concerns with the crew. If any doubt remains, then surveyors must not expose themselves to any risks and should not take part in the hazardous activity.

We expect our surveyors to carry out any work to the highest standards of occupational safety and fully support any refusal to inspect an area of a vessel if the refusal is based on safety concerns. We ask that a surveyor documents the circumstances that have led to a refusal to inspect a certain area and immediately reports the circumstances to Idwal.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Risk Assessments

Regular risk assessments must be carried out to see how accidents, injuries or illnesses could be caused on the ship and what can be done to reduce the chances of them happening. Risk assessments should be reviewed every year or whenever there are significant changes to either the ship or working activities.

A risk assessment involves:

- identification of hazards;
- an assessment of the likelihood of harm occurring;
- an assessment of the consequences;
- identification of safety measures to reduce the risks as far as is reasonably practicable.

There is no explicit requirement for a risk assessment to be written down. However, seafarers should be consulted when preparing risk assessments and must be informed of the results. The risk assessment must be reviewed regularly and after any significant change in practices or circumstances. A written record will assist in this process. A written risk assessment also provides evidence of compliance. Most vessel's will have documented their risk assessments as part of their SMS.

Risk Assessments should be provided for all shipboard operations. A surveyor should check the risk assessments maintained on board a vessel to ensure that they are specific to the vessel and its operations, are provided for all shipboard operations, are up to date, and the measures identified are being effectively implemented. The crew on board should be familiar with the risk assessments, and it should be verified that the crew know where to find the risk assessments, make changes to risk assessments and are implementing the risk mitigation factors identified within each assessment.

Name of Ship _____ Record no. _____

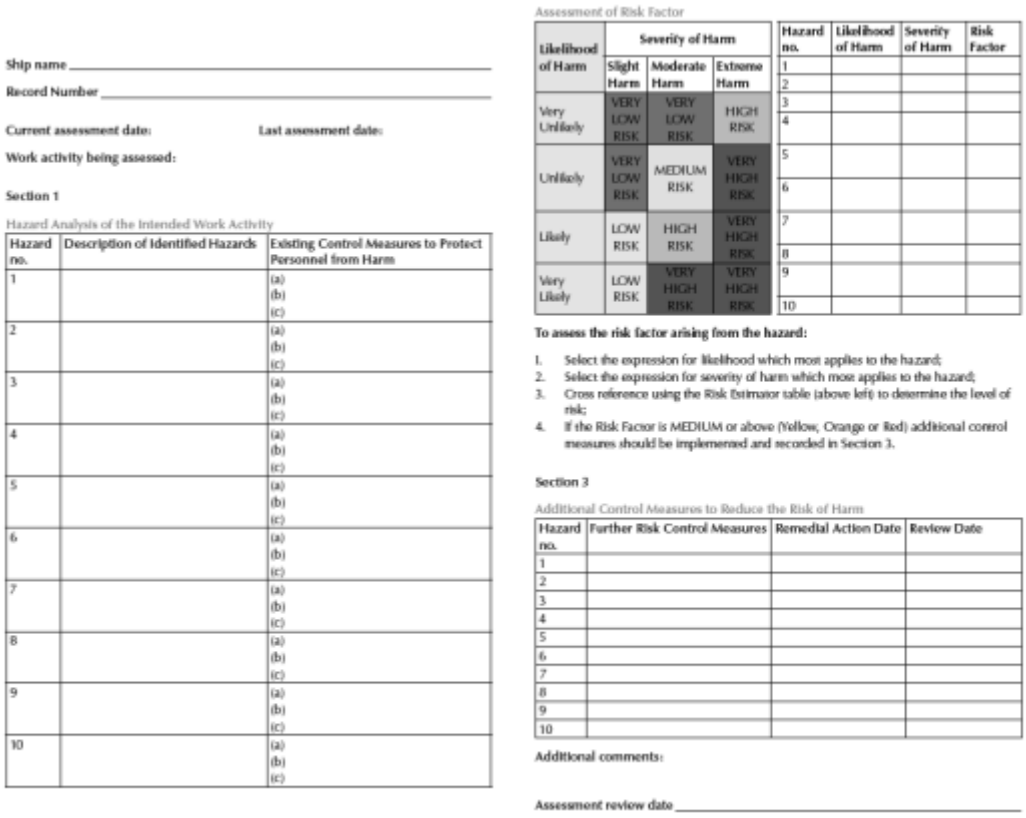
Work Area being assessed _____

Task ID number	Work process/action undertaken in area	Hazards associated with activity	Controls already in place	Significant risks identified	Further assessment required (Y/N)

Declaration:
Where no significant risk has been listed, we as assessors have judged that the only risks identified were of an inconsequential nature and therefore do not require a more detailed assessment.

Signed _____

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com



Ship name _____

Record Number _____

Current assessment date: Last assessment date:

Work activity being assessed:

Section 1

Hazard Analysis of the Intended Work Activity

Hazard no.	Description of Identified Hazards	Existing Control Measures to Protect Personnel from Harm
1		(a) (b) (c)
2		(a) (b) (c)
3		(a) (b) (c)
4		(a) (b) (c)
5		(a) (b) (c)
6		(a) (b) (c)
7		(a) (b) (c)
8		(a) (b) (c)
9		(a) (b) (c)
10		(a) (b) (c)

Assessment of Risk Factor

Likelihood of Harm	Severity of Harm		
	Slight Harm	Moderate Harm	Extreme Harm
Very Unlikely	VERY LOW RISK	VERY LOW RISK	HIGH RISK
Unlikely	VERY LOW RISK	MEDIUM RISK	VERY HIGH RISK
Likely	LOW RISK	HIGH RISK	VERY HIGH RISK
Very Likely	LOW RISK	VERY HIGH RISK	VERY HIGH RISK

Hazard no.	Likelihood of Harm	Severity of Harm	Risk Factor
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

To assess the risk factor arising from the hazard:

1. Select the expression for likelihood which most applies to the hazard;
2. Select the expression for severity of harm which most applies to the hazard;
3. Cross reference using the Risk Estimator table (above left) to determine the level of risk;
4. If the Risk Factor is MEDIUM or above (Yellow, Orange or Red) additional control measures should be implemented and recorded in Section 3.

Section 3

Additional Control Measures to Reduce the Risk of Harm

Hazard no.	Further Risk Control Measures	Remedial Action Date	Review Date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Additional comments:

Assessment review date _____

Master and Chief Engineer Standing Orders

The Master, Chief Engineer and Officer in charge of cargo operations should provide their own standing orders, which will be supplemented on a daily basis by night orders. These provide guidance to Officers and ratings for maintaining a watch on board. Standing orders must be written with regard to the particular ship, her trade, the team and their experience.

The Standing Orders should be readily available on board, be up to date, and be signed by all applicable crew members to confirm that they have been read and understood. A surveyor should verify that Standing Orders are available and up to date. Standing Orders must not contradict legislative requirements or requirements prescribed by the SMS, and if a surveyor identifies any contradiction then this should be raised and reported in the relevant section of the Idwal inspection checklist.

SOLAS Training Manuals

Training Manuals and Instructions for On Board Maintenance are required to be carried on board ships under Regulations II-2/15 and III/36 and of the International Convention for the Safety of Life at Sea (SOLAS),, as amended. A training manual shall be provided in each crew mess room and

recreation room or in each crew cabin. Any part of such information may be provided in the form of audio-visual aids in lieu of the manual. The following shall be explained in detail within the Life Saving Manual required under SOLAS III/36 :

1. donning of lifejackets, immersion suits and anti-exposure suits, as appropriate;
2. muster at the assigned stations;
3. boarding, launching, and clearing the survival craft and rescue boats, including, where applicable, use of marine evacuation systems;
4. method of launching from within the survival craft;
5. release from launching appliances;
6. methods and use of devices for protection in launching areas, where appropriate;
7. illumination in launching areas;
8. use of all survival equipment;
9. use of all detection equipment;
10. with the assistance of illustrations, the use of radio life-saving appliances;
11. use of drogues;
12. use of engine and accessories;
13. recovery of survival craft and rescue boats including stowage and securing;
14. hazards of exposure and the need for warm clothing;
15. best use of the survival craft facilities in order to survive;
16. methods of retrieval, including the use of helicopter rescue gear (slings, baskets, stretchers), breeches-buoy and shore life-saving apparatus and ship's line-throwing apparatus;
17. all other functions contained in the muster list and emergency instructions; and
18. instructions for emergency repair of the life-saving appliances.

The following shall be explained in detail within the Fire Training Manual required under SOLAS II-2/15:

1. general fire safety practice and precautions related to the dangers of smoking, electrical hazards, flammable liquids and similar common shipboard hazards;
2. general instructions on fire-fighting activities and fire-fighting procedures, including procedures for notification of a fire and use of manually operated call points;
3. meanings of the ship's alarms;
4. operation and use of fire-fighting systems and appliances;
5. operation and use of fire doors;
6. operation and use of fire and smoke dampers; and
7. escape systems and appliances.

The training manuals must be written in the working language of the ship. A surveyor should check that the training manuals are on board and provided within the required locations as per SOLAS. The crew should be familiar with the locations of the manuals. It is common for vessel’s to use generic

manuals, but manuals must be specific for the vessel and the equipment carried. If safety equipment on board has changed, the manuals should be amended and it is therefore important for a surveyor to check the manuals are specific to the vessel and up to date for the equipment carried.

SOPEP equipment list

Every oil tanker of 150 gross tonnage and above and every ship, other than an oil tanker, of 400 gross tonnage and above shall carry on board a Shipboard Oil Pollution Emergency Plan (SOPEP) approved by the Administration (MARPOL Annex I Reg. 37). A SOPEP plan should document the oil spill equipment inventory required to be carried on board a given vessel. The equipment required will vary widely between vessels. Vessels trading in the USA will have additional equipment requirements under the US Oil Pollution Act of 1990 (OPA'90). Surveyors should check the latest inventory and spot check the equipment against the stated required inventory which will be documented within the vessel's SOPEP plan.

Oil Record Book (ORB)

As per MARPOL Annex I Reg. 17, every oil tanker of 150 gross tonnage and above and every ship of 400 gross tonnage and above, other than oil tanker, shall be provided with an Oil Record Book Part I (Machinery Space Operations). As per MARPOL Annex I Reg. 36, every oil tanker of 150 gross tonnage and above shall be provided with an Oil Record Book Part II (Cargo/Ballast Operations).

The attached document below provides a list of the items to be recorded within the Oil Record Book, Part I - Machinery space operations (All Ships) and Oil Record Book, Part II - Cargo/ballast operations (Oil Tankers).

- https://www.register-iri.com/wp-content/uploads/ORB_Instructions.pdf
- https://www.dco.uscg.mil/Portals/9/DCO Documents/5p/CG-5PC/CG-CVC/Marpol/sdoc/MEPC_1_Circ_736_rev_2.pdf

The Oil Record Book is the key document for a vessel to record activities to ensure and prove compliance with the requirements of MARPOL Annex I. The Oil Record Book Part I and 2 (if required) shall be kept in such a place so as to be readily available for inspection at all reasonable times and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be preserved for a period of three years after the last entry has been made.

A surveyor should review the Oil Record Book on board to confirm that the vessel and its crew are complying with the relevant provisions of MARPOL Annex I.

Ballast Record Book

In accordance with Regulation B-2 of the Annex to the International Convention for the Control and Management of Ship's Ballast Water and Sediments, a record is to be kept of each Ballast Water operation. This includes discharges at sea and to reception facilities.

Entries in the Ballast Water Record Book (BWRB) shall be signed by the Officer in charge of the operation and each completed page shall be signed by the Master. All ballast water operations shall be fully recorded without delay and the entries in the BWRB should be made as follows:

1. when ballast water is taken on board;
2. whenever ballast water is circulated, transferred between tanks or treated for ballast water management purposes;
3. when ballast water is discharged into the sea; .
4. when ballast water is discharged to a reception facility;
5. accidental or other exceptional uptake or discharge of ballast water;
6. additional operational procedure and general remarks; .
7. exemptions; and
8. exceptions including emergency procedures.

The Ballast Record Book should be reviewed on board to ensure that the Record Book is being correctly filled up and that the vessel is complying with the relevant provisions of the International Convention for the Control and Management of Ship's. Ballast Water and Sediments. The Record Book should be reviewed for evidence of recent Ballast Water Treatment Plant issues or stoppage which, if identified, should be discussed with the crew and reported within the relevant section of the Idwal inspection checklist.

Garbage Management Plan

As per MARPOL Annex V Reg. 10.2, every ship of 100 gross tonnage and above, and every ship which is certified to carry 15 or more persons, and fixed or floating platforms, shall carry a garbage management plan which the crew shall follow. This plan shall provide written procedures for minimising, collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It shall also designate the person, or persons, in charge of carrying out the plan. Such a plan shall be based on the guidelines developed by the Organisation and written in the working language of the crew.

A surveyor should verify that a vessel has an approved Garbage Management Plan and should spot check areas to verify that the crew are complying with the procedures identified within the Garbage Management Plan.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Garbage Record Book (GRB)

As per MARPOL Annex V Reg. 10.3, every ship of 400 gross tonnage shall be provided with a Garbage Record Book. Ships certified to carry 15 or more persons which are engaged in international voyages as well as fixed and floating platforms are also required to have a Garbage Record Book.

Each discharge into the sea or to a reception facility, or a completed incineration, shall be promptly recorded in the Garbage Record Book and signed for on the date of the discharge or incineration by the Officer in charge. Each completed page or group of electronic entries of the Garbage Record Book shall be signed by the Master of the ship.

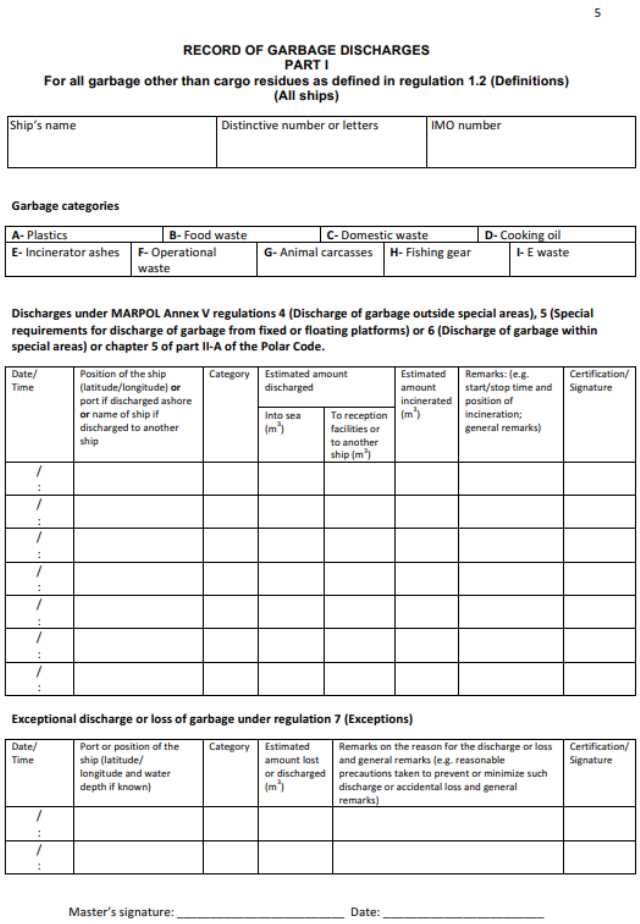
Garbage is to be grouped into categories for the purposes of recording in parts I and II of the Garbage Record Book (or ship's official logbook) as follows:

Part I

A. Plastics
B. Food wastes
C. Domestic wastes
D. Cooking oil
E. Incinerator ashes
F. Operational wastes
G. Animal carcasses
H. Fishing gear
I. E-waste

Part II

J. Cargo residues (non-HME)
K. Cargo residues (HME)



5

RECORD OF GARBAGE DISCHARGES
PART I
For all garbage other than cargo residues as defined in regulation 1.2 (Definitions)
(All ships)

Ship's name	Distinctive number or letters	IMO number

Garbage categories

A- Plastics	**B-** Food waste	**C-** Domestic waste	**D-** Cooking oil	
E- Incinerator ashes	**F-** Operational waste	**G-** Animal carcasses	**H-** Fishing gear	**I-** E waste

Discharges under MARPOL Annex V regulations 4 (Discharge of garbage outside special areas), 5 (Special requirements for discharge of garbage from fixed or floating platforms) or 6 (Discharge of garbage within special areas) or chapter 5 of part II-A of the Polar Code.

Date/ Time	Position of the ship (latitude/longitude) **or** port if discharged ashore **or** name of ship if discharged to another ship	Category	Estimated amount discharged		Estimated amount incinerated (m^3)	Remarks: (e.g. start/stop time and position of incineration; general remarks)	Certification/ Signature
			Into sea (m^3)	To reception facilities or to another ship (m^3)			
/ :							
/ :							
/ :							
/ :							
/ :							
/ :							
/ :							

Exceptional discharge or loss of garbage under regulation 7 (Exceptions)

Date/ Time	Port or position of the ship (latitude/ longitude and water depth if known)	Category	Estimated amount lost or discharged (m^3)	Remarks on the reason for the discharge or loss and general remarks (e.g. reasonable precautions taken to prevent or minimize such discharge or accidental loss and general remarks)	Certification/ Signature
/ :					
/ :					

Master's signature: _____ Date: _____

A surveyor should verify that a vessel has an approved Garbage Record Book and should spot check entries to verify that the crew are complying with the requirements identified within MARPOL Annex V.

☎ +44 (0)2920 446 644 | +86 21 6219 5047 enquiries@idwalmarine.com

Emission Control Area (ECA) change-over log

There are four Emission Control Areas (ECAs) designated under Regulation 14 of MARPOL Annex VI. Within ECAs, vessels can only operate using fuel with a 0.10% Sulphur limit. The four ECAs defined under MARPOL Annex VI are in North American, US Caribbean, North and Baltic seas. As well as the ECAs defined under MARPOL Annex VI, there are numerous other ECAs defined under national legislation which cover territorial waters. The European Union, Turkey, China, Norwegian world heritage fjords, Iceland, South Korea, Sydney, Australia and California, USA are all examples of regions were ECA zones have been implemented within territorial water via national legislation.

Those ships using separate fuel oils to comply with ECA requirements which enter or leave an Emission Control Area shall carry a written procedure showing how the fuel oil change-over is to be done, allowing sufficient time for the fuel oil service system to be fully flushed of all fuel oils exceeding the applicable sulphur content prior to entry into an Emission Control Area. The volume of low sulphur fuel oils in each tank as well as the date, time, and position of the ship when any fuel-oil-change-over operation is completed prior to the entry into an Emission Control Area or commenced after exit from such an area, shall be recorded.

Different administration have different requirements for recording activities. A vessel must have a means of recording the following items within a records book accepted and approved by the vessel's flag administration:

1. Low sulphur fuel changeover record for Sulphur Emission Control Area (SECA).
2. Exhaust gas cleaning system (EGCS) change of settings for Sulphur Emission Control Area (SECA) entry and exit (likely recorded within an EGCS Record Book as prescribed by Resolution MEPC.340 (77)).

A surveyor should verify the means of low Sulphur fuel change-over recording is compliant with the requirements of the vessel's administration. For example, some administrations permit change-over records to be entered into the main Engine Logbook without the need for a separate change-over log and some administration require a MARPOL Annex VI log with contains prescribed entries for all MAPROL Annex VI required activities. The change-over records should be checked to ensure compliance with applicable change-over procedures. Any items of note should be raised with the crew and reported within the relevant section of the Idwal inspection checklist.

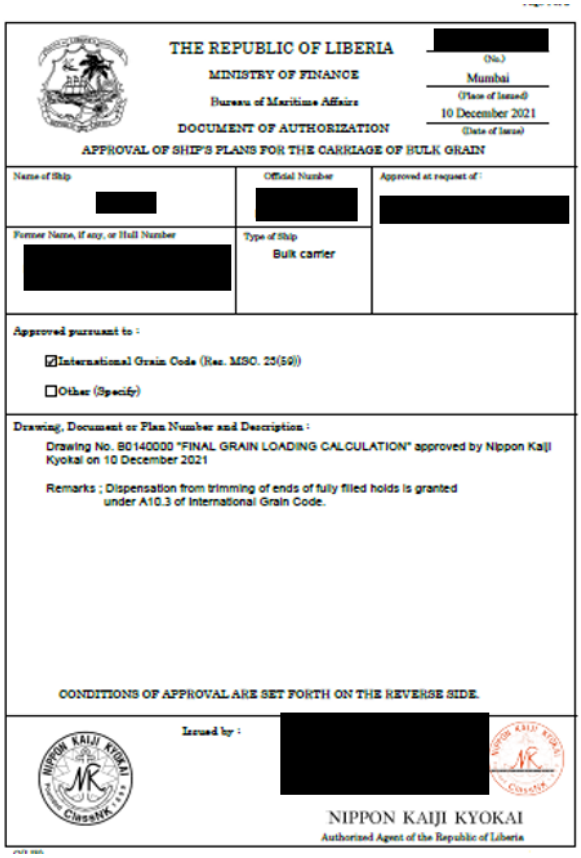
☎ +44 (0)2920 446 644 | +86 21 6219 5047 ✉ enquiries@idwalmarine.com

Certificate of Authority to Carry Grain (Dry Cargo)

As per SOLAS VI Regulation 9, a cargo ship carrying grain shall comply with the requirements of the International Grain Code, and hold a document of Authorisation. A ship without such a document shall not load grain until the Master satisfies the Administration, or the Contracting Government of the port of loading on behalf of the Administration, that the ship will comply with the requirements of the International Grain Code in its proposed loaded condition.

The term grain covers wheat, maize (corn), oats, rye, barley, rice, pulses, seeds and processed forms thereof, whose behaviour is similar to that of grain in its natural state. The Grain Code applies to ships regardless of size, including those of less than 500 tons gross tonnage, engaged in the carriage of grain in bulk.

A surveyor should verify that an applicable vessel carries and maintains a valid Certificate of Authority (COA) to Carry Grain, as this confirms that the vessel generally complies with the requirements of the International Grain Code and can therefore load grain. The document shall accompany or be incorporated into the grain loading manual approved by a flag state or Recognised Organisation (RO)



THE REPUBLIC OF LIBERIA
MINISTRY OF FINANCE
Bureau of Maritime Affairs
DOCUMENT OF AUTHORIZATION
APPROVAL OF SHIP'S PLANS FOR THE CARRIAGE OF BULK GRAIN

(No.)
Mumbai
(Place of Issue)
10 December 2021
(Date of Issue)

Name of Ship: [redacted]
Official Number: [redacted]
Approved at request of: [redacted]
Former Name, if any, or Hull Number: [redacted]
Type of Ship: Bulk carrier

Approved pursuant to :

☑ International Grain Code (Res. MSC. 23(59))

☐ Other (Specify)

Drawing, Document or Plan Number and Description :

Drawing No. B0140000 "FINAL GRAIN LOADING CALCULATION" approved by Nippon Kaiji Kyokai on 10 December 2021

Remarks ; Dispensation from trimming of ends of fully filled holds is granted under A10.3 of International Grain Code.

CONDITIONS OF APPROVAL ARE SET FORTH ON THE REVERSE SIDE.

Issued by : [redacted]

NIPPON KAIJI KYOKAI
Authorized Agent of the Republic of Liberia

Cargo Loading Manual (Dry Cargo)

All ships are designed with limitations imposed upon their operability to ensure that the structural integrity is maintained. Therefore, exceeding these limitations may result in overstressing of the ship's structure which may lead to catastrophic failure. The ship's approved loading manual provides a description of the operational loading conditions upon which the design of the hull structure has been based.

- It is a statutory requirement of the International Load Line Convention that, noting exemptions, "the Master of every new vessel be supplied with sufficient information, in an approved form, to enable him to arrange for the loading and ballasting of his ship in such a way as to avoid the creation of any unacceptable stresses in the ship's structure."
- The ship's approved loading manual is an essential document for the planning of cargo stowage, loading and discharging operations. The cargo loading manual, for bulk carriers, describes:
- The loading conditions on which the design of the ship has been based, including permissible limits of still water bending moments and shear force.
- The results of calculations of Still Water Bending Moments (SWBM), Still Water Shear Forces (SWSF) and where applicable, limitations due to torsional and lateral loads. SWSF and SWBM for each included loading condition.
- Envelope results and permissible limits of still water bending moments and shear forces in the hold flooded as applicable.
- The cargo hold(s) or combination of cargo holds that might be empty at full draught. If no cargo hold is allowed to be empty at full draught, this is to be clearly stated in the loading manual.
- Maximum allowable and minimum required mass of cargo and double bottom contents of each hold as a function of the draught at mid-hold position.
- Maximum allowable and minimum required mass of cargo and double bottom contents of any two adjacent holds as a function of the mean draught in way of these holds. This mean draught may be calculated by averaging the draught of the two mid-hold positions.
- Maximum allowable tank top loading together with specification of the nature of the cargo for cargoes other than bulk cargoes.
- Maximum allowable load on deck and hatch covers, where applicable.
- The maximum rate of ballast change together with the advice that a load plan is to be agreed with the terminal on the basis of the achievable rates of change of ballast.
- The relevant operational limitations.

The ship's loading manual is a ship specific document as the data contained therein is only applicable to the ship for which it has been approved. A surveyor should check that the loading manual is still maintained on board and any amendments have been recorded and approved by the vessel’s Flag State or Recognised Organisation (RO). The loading manual contains some of the information required for the Idwal inspection checklist including the uniform tank top strength for each hold.

Lashing Equipment Inventory (Dry Cargo)

As per SOLAS VI Regulation 5, all cargoes, other than solid and liquid bulk cargoes, cargo units and cargo transport units, shall be loaded, stowed and secured throughout the voyage in accordance

with the Cargo Securing Manual approved by the Administration. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to relevant guidelines developed by the Organisation (Revised Guidelines of the preparation of the Cargo Securing Manual (MSC.1/Circ.1353/Rev.1). A cargo securing manual must contain the number of, and the functional and design characteristics of, the portable cargo securing devices carried on board the ship. The Cargo Securing Manual will define how many of each portable cargo securing device is required for a full load of units. Maintenance records for the fixed and portable cargo securing units on board should also be maintained as part of the cargo securing manual and the crew should carry out regular inventories of all securing equipment provided on board.

A surveyor should check the last cargo securing equipment inventory and compare it to the requirements noted within the approved Cargo Securing Manual. Any shortfalls of equipment should be investigated and reported in full within the Idwal inspection checklist.

Cargo Lifting Appliances maintenance records

As per ILO Convention No. 152 and Recommendation No. 160, vessel's with lifting gear should carry a "Register of Ships Lifting Appliances and Cargo Handling Gear". They are intended to ensure that ships' lifting appliances are initially certified by a competent person and to establish periodically that they continue to be in safe working order to the satisfaction of a competent person acceptable to the competent authority.

A Register of Lifting appliances and items of loose gear shall be kept in a form prescribed by the competent authority. This Register and related Certificates shall be kept and be available to any person authorised by the competent authority. The Register and Certificates for gear currently aboard the ship shall be preserved for at least five years after the date of the last entry.

Every lifting appliance shall be certified by a competent person before being taken into use for the first time to ensure that it is of good design and construction and of adequate strength for the purpose of which it is intended. All lifting appliances and every item of loose gear shall be thoroughly examined by a competent person at least once in every 12 months. The particulars of these thorough examinations shall be entered in Part I of the Register. Re-testing and thorough examination of all lifting appliances and every item of loose gear is to be carried out:

a. after any substantial alteration or renewal, or after repair of any stress bearing part; and
b. in the case of lifting appliances at least once in every five years.

Regular visual inspections of every item of loose gear shall be carried out by a responsible person before use. A record of these regular inspections is to be entered in Part II of the Register, but entries need only be made when the inspection has indicated a defect in the item.

A surveyor should examine all applicable documents and records associated with the Cargo Lifting Appliance to ensure that the lifting appliance are being examined and tested as required and that

regular maintenance is being carried out in-line with the Manufacturer and Recognised Organisation or Flag State requirements. Records should be examined for evidence of frequent issues or major repairs which should be reported in full in the Idwal inspection checklist. Any open defects identified from maintenance records or excessive wear of components, which may make lifting appliance unreliable when used, should be investigated and reported in full with recorded evidence of the findings.