

CHARACTER OF CLASSIFICATION AND CLASS NOTATIONS

PART I, CHAPTER 10

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CHARACTER OF CLASSIFICATION AND CLASS NOTATIONS

PART I, CHAPTER 10

SECTION 1: CHARACTER OF CLASSIFICATION AND CLASS NOTATIONS

1.1 DEFINITIONS

NOTE

For the purpose of class notations, the definitions given in 1.1.1 to 1.1.2 will apply.

1.1.1 Clear water. Water having sufficient depth to permit the normal development of wind generated waves.

1.1.2 Fetch. The extent of clear water across which a wind has blown before reaching the ship.

1.1.3 Sheltered water. Water where the fetch is six nautical miles or less.

1.1.4 Reasonable weather. Wind strengths of force six or less in the Beaufort scale, associated with sea states sufficiently moderate to ensure that green water is taken on board the ship's deck at infrequent intervals only or not at all.

1.1.5 Type notation. A notation indicating that the ship has been arranged and constructed in compliance with particular Rules intended to apply to that type of ship. Type notations that may be assigned are listed in Table 1.1.2.

Table 1.1.2 Type notations

DRY CARGO		LIQUID CARGO		PASSENGER	
Symbols	Types	Symbols	Types	Symbols	Types
AH	Anchor handler	CHTNK	Chemical tanker	CRU	Cruise Vessel
AHTS	Anchor Handler Tug Ship/ Anchor Handler Towing Supply	CNG	Compress Natural Gas	CRW	Crew Boat
BARG	Barge	DRV	Drill vessel	FER	Passenger ferry
BACO	Barge Container Carrier	DHOT	Double hull oil tanker	HOT	Hotel and Rest Vessel
BLK	Bulk carrier	FPSO	Floating Production Storage & offloading Ship	LFE	Local Ferry
CAB	Cable Vessel	FSO	Floating Storage & offloading Ship	PAS	Passenger Vessel / Ship
CONS	Container ship	FSRU	Floating Storage regasification Unit	PASF	Passenger Ferry
CONBLK	Container Bulk	GASC	Gas Carrier	PASVF	Passenger/Vehicle Ferry
CONRORO	Container Roll On/Roll Off	LGC	Liquefied gas carrier	ROPAX	Roll on-Roll off & Passenger Ship
CONDC	Container Dry Cargo	LGT	Liquefied gas tanker	ROPAXFF	Roll on-Roll off & Passenger Fast Ferry
CV	Crane Vessel	LNG	Liquefied Natural Gas	SPS	Sailing Passenger Ship
DSS	Diving support ship	LPG	Liquefied Petroleum Gas	TNK	Tanker
DRG	Dredger	MODU	Mobile Offshore Drilling Unit		
ET	Escort tug	MOU	Mobile Offshore Unit		
FIFI	Firefighting Vessel	OB	Oil Barge		
FIS	Fishing vessel	OBA	Offshore Barge		
FDK	Floating Dock	OBC	Oil Bulk Carrier		
FLO/FLO	Float-On / Float -Off	OBO	Ore, Bulk & Oil vessel/carrier		
FLIP	Floating Instrument Platform	O/O	Ore & Oil vessel/carrier		
GCA	General Cargo Vessel	OOC	Ore Oil Carrier		
HLV / HLS	Heavy Lift Vessel / Heavy Lift Ship	ORS	Oil Recovery Ship		
HB	Hopper Barge	OTV	Oil Tanker Vessel		
HD	Hopper Dredger	POC	Product Oil Carrier		
HVC	Hovercraft	PROBO	Product Oil Bulk Ore		
HSC	High Speed Craft				
ICE	Icebreaker				
LAU	Launch				
LC	Landing Craft				
LASH	Lighter Aboard ship				
LIV	Livestock Carrier				

LO-LO	Lift On/Lift Off				
OBCV	Ore, Bulk & Container Vessel				
OC	Ore carrier				
OSV	Offshore Supply Vessel				
OT	Offshore Tug				
OV	Oceanographic Vessel				
OWS	Offshore Well Stimulation				
PON	Pontoon				
PVS	Platform Supply Vessel				
RARA	Rail On-Rail Off				
RCS	Reclamation ship				
REF	Refrigerated cargo ship				
RES	Research Vessel				
RORO	Roll on-Roll off cargo ship				
PPL	Pipe laying				
SAL	Salvage Vessel				
SLV	Sea launch Vessel				
SEABEE	Barge Container Carrier				
SBB	Shipborne Barge				
ST	Stern Trawler				
STS	Standby ship				
SHB	Split Hopper Barge				
SHD	Split Hopper Dredger				
TRW	Trawler				
TUG	Tug				
VHC	Vehicle Carrier				
VLCC	Very Large Crude Carrier				
VLGC	Very Large Gas Carrier				
ULCC	Ultra Large Crude Carrier				
WDS	Waste Disposal Ship				
YAC	Yacht				

1.1.6 Cargo notation. A notation indicating that the ship has been designed modified or arranged to carry one or more particular cargoes, e.g. sulphuric acid. Ships with one or more particular cargo notations are not thereby prevented from carrying other cargoes for which they are suitable.

1.1.7 Special duties notation. A notation indicating that the ship has been designed, modified or arranged for special duties other than those implied by the type and cargo notations, e.g. research. Ships with special duties notations are not thereby prevented from performing any other duties for which they may be suitable.

1.1.8 Special features notation. A notation indicating that the ship incorporates special features which significantly affect the design, *see* Table 1.2.2

1.1.9 Service restriction notation. A notation indicating that a ship has been classed on the understanding that it will be operated only in suitable areas or conditions which have been agreed by the Classification, e.g. protected waters service.

1.1.10 Linked means connected, while in operation, to an attendant ship (which may be on shore, submerged or afloat) by a restraining line, suspension cable or umbilical cord.

1.1.11 Laid-up notation. A ship not under repair or not actively employed may be assigned the laid-up notation in order to maintain the ship in class subject to agreement by the Classification. A general examination of the hull and machinery is to be carried out in lieu of the Annual Survey. An Underwater Examination (UWE) is to be carried out in lieu of the Special Survey.

1.2 CHARACTER SYMBOLS

1.2.1 All ships, when classed, will be assigned one or more character symbols as applicable. For the majority of ships, the character assigned will be **100A1**,  **100A1**

1.2.2 A full list of character symbols for which ships may be eligible is as follows:

✠ This distinguishing mark, will be assigned to ships built under supervision of another IACS member society and later assigned class with MCO. For such ships the class notations will be reviewed separately and equivalent notations will be assigned.

100 This character figure will be assigned to all ships considered suitable for sea-going service.

A This character letter will be assigned to all ships which have been accepted into class in accordance with MCO's Rules and Regulations, and which are maintained in good and efficient condition.

1 This character figure will be assigned to:

(a) Ships having on board, in good and efficient condition, anchoring and/or mooring equipment in accordance with the Rules.

(b) Ships classed for a special service, having on board, in good and efficient condition, anchoring and/or mooring equipment approved by the Classification as suitable and sufficient for the particular service.

N This character letter will be assigned to ships on which the Classification has agreed that anchoring and mooring equipment need not be fitted in view of their particular service.

T This character letter will be assigned to ships which are intended to perform their primary designed service function only while they are anchored, moored, towed or linked, and which have, in good and efficient condition, adequately attached anchoring, mooring, towing or linking equipment which has been approved by the Classification Committee as suitable and sufficient for the intended service.

1.2.3 For classification purposes, the character figure **1**, or either of the character letters **N** or **T**, is to be assigned.

1.2.4 In cases where the anchoring and/or mooring equipment is found to be seriously deficient in quality or quantity, the class of the ship will be liable to be withheld.

1.2.2 TABLE : SPECIAL FEATURES NOTATION

SYMBOLS	CHARACTER SYMBOLS
✠	This distinguishing mark will be assigned, at the time of classing, to new ships constructed under MCO's Special Survey, in compliance with the Rules, and to the satisfaction of the Classification Committee.
• ✠	This distinguishing mark, will be assigned to ships built under supervision of another IACS member society and later assigned class with MCO. For such ships the class notations will be reviewed separately and equivalent notations will be assigned.
100	This character figure will be assigned to all ships considered suitable for sea-going service.
A	This character letter will be assigned to all ships which have been built or accepted into class in accordance with MCO's Rules and Regulations, and which are maintained in good and efficient condition
1	This character figure will be assigned to:
(a)	Ships having on board, in good and efficient condition, anchoring and/or mooring equipment in accordance with the Rules.
(b)	Ships classed for a special service, having on board, in good and efficient condition, anchoring and/or mooring equipment approved by the Classification Committee as suitable and sufficient for the particular service
N	This character letter will be assigned to ships on which the Classification Committee has agreed that anchoring and mooring equipment need not be fitted in view of their particular service.
T	This character letter will be assigned to ships which are intended to perform their primary designed service function only while they are anchored, moored, towed or linked, and which have, in good and efficient condition, adequately attached

	anchoring, mooring, towing or linking equipment which has been approved by the Classification Committee as suitable and sufficient for the intended service.
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SPECIAL FEATURES NOTATION	DESCRIPTION
BC	Assigned to bulk carriers of length 150 m or above
Bottom Strengthened for (Operating Aground) (Loading and Unloading Aground)	Assigned where the bottom structure has been additionally strengthened for loading and unloading aground
BLS	Bow Loading System. Assigned to tankers equipped with bow loading arrangements to facilitate the transfer of cargo oil from offshore loading terminals
Cargo Loading on (Tank Top/ Tween/ Deck (s) Plating/ Hatch cover(s)) limited to tonnes/m2	Assigned where cargo loading on tank tops, decks and/or hatch covers are limited to a specified maximum value which is less than the normal Rule loading
Carriage of Oils with a F.P. not exceeding 60°C	Assigned to non-oil tankers where the ship is suitably constructed and arranged for the carriage of oils with a flash point not exceeding 60°C(closed cup test)
Carriage of Oils with a F.P. exceeding 60°C (Specified Cargo(es)) only	Assigned where only the carriage of oils having a flash point exceeding 60°C (closed cup test) is contemplated
c.c.	Assigned where arrangements have been approved for the carriage of a specific product(s)
CCSA	Assigned where structures are fitted with an approved corrosion control system
CCSA	Certified Container Securing Arrangements. Assigned where freight container securing arrangements are fitted, and the design and construction of the system is in accordance with MCO Rules and loose fittings are supplied
CG	Cargo Gear. Assigned where cargo gear is included in class at the Owner's request
CL	Cargo Lift(s). Assigned where cargo lift(s) are included in class at the Owner's request
CR	Cargo Ramp(s). Assigned where cargo ramp(s) are included in class at the Owner's request
CRC -/- -kW -%/-%	Carriage of refrigerated containers. The CRC notation may be applied to any ship which has the ability to carry refrigerated containers operating at their design condition with a 24-hour average external ambient air temperature of 35°C The following descriptive notations may be appended, giving details of electrical power and type of cargo: -/- No. of hold-stowed refrigerated containers/No. of deck-stowed refrigerated containers e.g. 230/140 -kW Power generating capacity dedicated to supplying the container plug-in points, e.g. 2,800 kW -%/-% Stowage ratio of deep frozen and chilled cargoes, e.g. 60%/40%
Container Cargoes in (((all) Hold(No(s)))(and on Upper Deck)((and on (all) Hatch Cover(s) (No(s))...))	Assigned where general cargo ships carry container cargoes.
Deck No(s) ... Strengthened for Carriage of Roll on-Roll off Cargoes	Assigned where it is proposed either to stow wheeled vehicles on the deck or to use wheeled vehicles for cargo handling and the deck and supporting structure has been specially considered

SPECIAL FEATURES NOTATION	DESCRIPTION
DSPM4	Dual Single Point Mooring. Assigned to a ship provided with a dual mooring line arrangement at a single-point mooring
Fire-Fighting Ship 1, 2, 3 (with water spray)	Designed where fire protection and fire-fighting equipment is provided. Type 1, 2 or 3 signifies the capacity of the fire-fighting equipment. The total discharge capacity of the monitors in m ³ /h is shown in brackets. 'With water spray' signifies that a ship is provided with a water spray system which will provide an effective cooling spray of water
Hatch Covers omitted in Hold (No(s)) ...	Assigned where the omission of hatch covers have been specially considered based upon the model tests or alternative means to determine the quantity of water likely to ingress the cargo holds and the means by which it is effectively and safely discharged
Heavy Deck Loads	Assigned where decks are strengthened for loading in excess of Rule basic minimum, e.g. 'Upper deck aft of Fr. 50 strengthened for load of 10 tonnes/m ² '
Helicopter Landing Area	Assigned where a helicopter landing area is provided
Hold (No(s)) ... may be empty at draughts not (less than) (exceeding) ...m	Assigned where particular loading arrangements have been specially considered
Ice Class	Assigned where a ship is strengthened to navigate in specific ice conditions. Supplementary Ice Class notations are given in Table 2.2.3
Icebreaker	Assigned designed for icebreaking duties
LA	Mandatory Lifting Appliance(s). Assigned where the lifting appliance is considered to be an essential feature, e.g., cranes on crane barges, lifting arrangements for diving on diving support ships, and is mandatory
LFPL	Low Flashpoint liquids. Assigned to offshore supply ships intended for the carriage of liquids with flashpoint below 60°C (closed cup test) in bulk
For Liquefaction and Storage of (Methane, etc.) in Independent Gas Tanks (Type B, etc.), Maximum Vapour Pressure () bar, Minimum Temperature Minus () °C	Assigned where ships of Category 1B or 2 which have process plants installed solely for the purposes of the physical liquefaction of impure feedstock gases at low temperature and the storage of the purified liquefied gases (where the chemical treatment of the impurities is an incidental process)
MARPOL 20.1.3	Assigned to double hull oil tankers not meeting the Rule minimum double side width requirements but which comply with MARPOL Annex 1, Regulation 20.1.3
MARPOL 21.1.2	Assigned to double hull oil tankers of less than 5000 tonnes deadweight which have a complete double hull in accordance with MARPOL Annex I, Regulation 21.1.2
Movable Decks	Assigned where all movable decks comply with MCO requirements. Movable decks other than those specifically indicated in MCO Rule requirements are not a classification item
Oil Recovery	Assigned when a ship is equipped for oil recovery operations
Petrol in Hold (No(s))...	Assigned to ships that can carry motor vehicles with fuel in their tanks for self-propulsion, in specified locations. It does not apply to ships that are designed primarily for the carriage of motor vehicles Specific requirements will be advised upon request
PL	Passenger Lift(s). Assigned where the passenger lift(s) are included in class at the Owner's request
PM T1 [or T2 or T3] encircled	For ships fitted with a positional mooring system (PM). The supplementary notation T1 [or T2 or T3] encircled may be applied if the system is thruster-assisted. The encircled numeral defines the thruster allowance
PMC T1 [or T2 or T3] encircled	For ships fitted with a positional mooring system for mooring in close proximity to other ships or installations (PMC). The supplementary notation T1 [or T2 or T3] encircled may be applied if the system is thruster-assisted. The encircled numeral defines the thruster allowance

SPECIAL FEATURES NOTATION	DESCRIPTION
RD	Relative Density. Assigned where a ship has tanks appraised for a maximum permissible relative density greater than 1,025
Self-Discharging (Unloading)	Assigned where a ship fitted with self-unloading equipment whose structural aspect has been specially approved
SLS	Stern Loading System. Assigned to tankers equipped with stern loading arrangements to facilitate the transfer of cargo oil from offshore loading terminals
Specialised for the Carriage of ...	Assigned to a vessel which has been designed for the carriage of specified cargo other than that applied by the type notation
SPM4	Single Point Mooring. Assigned to a ship provided with a single mooring line arrangement at a single point mooring
Strengthened for Heavy Cargoes ((any) Hold (No(s)) may be empty)	Assigned to a bulk carrier of less than 150 m in length or a ship designed for the carriage of heavy cargoes. If only certain holds are strengthened for heavy cargoes, they will be specified
HNLS	Hazardous and noxious liquids system. Assigned to ships complying with the requirements for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk
Hold No(s) ... Strengthened for Regular Discharge by Heavy Grabs	Assigned to bulk carriers where cargoes are regularly discharged by heavy grabs and the thickness of the plating of the hold inner bottom, hopper and transverse bulkhead bottom stool is increased
Submersible to a depth of ...m below Upper Deck in Harbour only	Assigned to a ship that is designed so that it can be submersed to a specified depth in harbour only
Timber Deck Cargoes	Assigned where a cargo of timber is carried on an uncovered part of the freeboard or superstructure deck (does not include wood pulp or similar cargo) and the requirements of the 1966 Load Line Convention concerning timber deck cargoes or other National Regulations are complied with
TLS	Submerged Turret Loading System. Assigned to tankers equipped with submerged turret loading systems to facilitate the transfer of cargo oil from offshore loading to terminals
Winterisation	Assigned to a ship that is intended to navigate in cold climates and may be exposed to low temperatures that may cause equipment to freeze due to ice accretion from atmospheric icing or sea spray or due to freezing of liquid within a system. Protection measures are provided and operational procedures are specified to ensure that equipment is suitably protected to enable operation in low temperatures.
WDL(+)	Weather Deck Load. Assigned where the weather deck load scantlings have been approved for a loading greater than a design head of 3,5 m

1.3 CLASS NOTATIONS (HULL)

1.3.1 When considered necessary by the Classification or when requested by an Owner and agreed by the Classification Committee, a class notation will be appended to the character of classification assigned to the ship. This class notation will consist of one of, or a combination of: a type notation, a cargo notation, a special duties notation, a special features notation and/or a service restriction notation, e.g. '✳ **100A1** Oil Tanker F.P. exceeding 60°C in No. 4 tanks ESP

1.3.2 Details of the ship types and particular cargoes for which special Rules apply are given in Chapters 2, 3, 4, 5 and 6 which apply to such ships and cargoes.

1.3.3 Details of the more common special features and the conditions relevant to the assignment of special features notations, together with the form of such notations, are incorporated in Chapters 2, 3, 4, 5 and 6 as applicable.

1.3.4 Service restriction notations will generally be assigned in one of the forms shown in 1.3.6 to 1.3.10, but this does not preclude Owners or Shipbuilders requesting special consideration for other forms in unusual cases.

1.3.5 Where a service notation is applicable, certain exemptions may be granted. Where these affect statutory requirements, such as Load Lines, the Owner or shipbuilder is to obtain the authorization of the Flag State. Such exemptions are to be recorded on the Class certificate and any applicable statutory certificate.

1.3.6 **Protected waters service.** Service in sheltered waters adjacent to sand banks, reefs, breakwaters or other coastal features, and in sheltered waters between islands, e.g. 'Protected Waters Service at Storebaelt Bridge'.

1.3.7 **Extended protected waters service.** Service in protected waters and also for short distances (generally less than 15 nautical miles) beyond protected waters in 'reasonable weather', e.g. 'Extended Protected Waters Service from the Port of Lagos'.

1.3.8 **Specified coastal service.** Service along a coast, the geographical limits, and for a distance out to sea generally not exceeding 21 nautical miles, unless some other distance is specified for 'coastal service' by the Administration with which the ship is registered, or by the Administration of the coast off which it is operating, as applicable, e.g. 'Indonesian coastal service'.

1.3.9 **Specified route service.** Service between two or more ports or other geographical features e.g. 'London to Rotterdam service' 'London, Rotterdam and Hamburg service'.

1.3.10 **Specified operating area service.** Service within one or more geographical area(s), e.g. 'Pacific Tropical Zone service'. 'Great Lakes and St. Lawrence to Pt. du Monts service' 'Red Sea, Eastern Mediterranean and Black Sea service'.

1.3.11 ***IWS.** This notation (In-water Survey) may be assigned to a ship where the applicable requirements of MCO's Rules and Regulations. This notation will be withdrawn for **ESP** ships upon reaching 15 years of age.

1.3.12 **ESP.** This notation (Enhanced Survey Programme) will be assigned to oil tankers, combination carriers, chemical tankers, bulk carriers and ore carriers which are subject to an enhanced survey programme

1.3.13 **CSR.** This notation will be assigned to bulk carriers and double hull oil tankers. Additional mandatory and non-mandatory class notations for CSR bulk carriers are given in 1.3.14

1.3.14 **Class notations for CSR bulk carriers.** In general, CSR bulk carriers less than 150 m in length are to comply with the requirements (CSR) and will be eligible for one of the following mandatory class notations:

{**any holds may** This class notation is normally assigned to **be empty**} A ship designed to carry dry bulk cargoes of cargo density 1,0 tonne/m³ and above, with an approved arrangement of loaded holds such that any hold may be empty at the maximum draught.

{**holds a, b, ...** This class notation is normally assigned to **may be empty**} A ship designed to carry dry bulk cargoes of cargo density 1,0 tonne/m³ and above with specified holds empty at maximum draught.

CSR bulk carriers equal to or greater than 150 m in length will be eligible for one of the following mandatory class notations:

BC-A, {**holds a,** This class will be assigned for bulk carriers **b, ... may be** Designed to carry dry bulk cargoes of cargo **empty**} density 1,0 tonne/m³ and above with specified holds empty at maximum draught.

BC-B This class will be assigned for bulk carriers designed to carry dry bulk cargoes of cargo density 1,0 tonne/m³ and above with all cargo holds loaded.

BC-C This class will be assigned for bulk carriers designed to carry dry bulk cargoes of cargo density less than 1,0 tonne/m³ with all cargo holds loaded.

1.3.15 **ESN**. This notation (Enhanced Survivability Notation) will be assigned to non-**CSR** bulk carriers which are designed to withstand the individual flooding of all cargo holds.

1.3.16 **LI**. This notation will be assigned where an approved loading instrument has been installed as a classification requirement.

1.4 Class notations (machinery)

1.4.1 The following class notations are associated with the machinery construction and arrangement, and may be assigned as considered appropriate by the Classification,:

- ⊗ **LMC** This notation will be assigned when the propelling and essential auxiliary machinery, have been constructed, installed and tested under MCO's Special Survey and in accordance with MCO's Rules and Regulations for the classification of Ships,
This notation will be assigned when;
The existing machinery installation and arrangement have been tested and found to be acceptable to MCO
- MCH** .This notation will be assigned when the:
- System arrangements of propelling and essential auxiliary machinery, , are appraised and found to be acceptable to MCO.
- IGS** This notation will be assigned when a ship intended for the carriage of oil in bulk, or for the carriage of liquid chemicals in bulk, is fitted with an approved system for producing gas for inerting the cargo tanks.

1.4.2 The following class notations are associated with the machinery control and automation, and may be assigned as considered appropriate by the Classification:

- UMS** This notation may be assigned when the arrangements are such that the ship can be operated with the machinery spaces unattended. It denotes that the control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- CCS** This notation may be assigned when the arrangements are such that the machinery may be operated with continuous supervision from a centralised control station. It denotes that the control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto
- ICC** This notation may be assigned when the arrangements are such that the control and supervision of ship operational functions are computer based. It denotes that the control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- IP** This notation may be assigned to a ship classed with MCO when the arrangements of the machinery are such that the propulsion equipment and all the essential auxiliary machinery is integrated with the power unit for operation under all normal sea-going and manoeuvring conditions. The system is to be bridge controlled and the propulsion equipment is to incorporate an emergency means of propulsion in the event of failure in the prime mover. It also denotes that the machinery and control equipment have been arranged, installed and tested in accordance with MCO's Rules.
- IFP** This additional notation may be assigned where an integrated fire protection system is fitted to provide control and monitoring of all active fire protection and fixed fire extinguishing systems from a centralised fire-control station. It denotes that the integrated fire protection system has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- PORT** Assigned when equipment is installed for the automation of in-port operations involving manoeuvring, berthing and laying alongside. For the assignment of this notation, the ship is also to be assigned **UMS**

1.4.3 The following class notations are associated with dynamic positioning arrangements, and may be assigned as considered appropriate by the Classification:

- DP(CM)** This notation may be assigned when a ship is fitted with centralised remote manual controls for position keeping and with position reference system(s) and environmental sensor(s). It denotes that the machinery and control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- DP(AM)** This notation may be assigned when a ship is fitted with automatic main and manual standby controls for position keeping and with position reference system(s) and environmental sensor(s). It denotes that the machinery and control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- DP(AA)** This notation may be assigned when a ship is fitted with automatic main and automatic standby controls for position keeping and with position reference system(s) and environmental sensor(s). It denotes that the machinery and control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.
- DP(AAA)** This notation may be assigned when a ship is fitted with automatic main and automatic standby controls for position keeping, together with an additional/emergency automatic control unit located in a separate compartment and with

position reference systems and environmental sensors. It denotes that the machinery and control engineering equipment has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.

PCR() This rating supplements the DP () notation. This rating indicates the calculated percentage of time that a unit is capable of holding heading and position under a standard set of environmental conditions (North Sea).
Two rating numerals are calculated:

- The first numeral represents the percentage of time that the ship can remain on station when subjected to a set of standard environmental conditions (North Sea fully developed) with all thrusters operating.
- The second numeral represents the percentage of time that the ship can remain on station when subjected to a set of standard environmental conditions (North Sea fully developed) with the most effective thruster being inoperative.
- A typical rating might be (95),(70). The foregoing dynamic positioning notations may be supplemented with a Performance Capability Rating (PCR). This rating indicates the calculated percentage of time that a ship is capable of holding heading and position under a standard set of environmental conditions (North Sea).

1.4.4 The following class notations are associated with navigation safety, and may be assigned as considered appropriate by the Classification:

NAV1 This notation will be assigned when the bridge layout and level of equipment are such that the ship is considered suitable for safe periodic operation under the supervision of a single watchkeeper on the bridge. It denotes that the navigational installation has been arranged, installed and tested in accordance with MCO's Rules, or is equivalent thereto.

IBS This additional notation will be assigned where an integrated bridge system is fitted to provide electronic chart display, track planning and automatic track following, centralised navigation information display, and bridge alarm management. It denotes that the integrated bridge system has been arranged, installed and tested satisfactory by MCO's Rules, or is equivalent thereto.

For assignment of this notation, in addition to satisfying MCO Rules, or equivalent thereto, for navigational function integration:

(a) The layout of the bridge and the equipment located on the bridge is to satisfy the requirements of a relevant international or national ergonomic or human-centred design standard, or an acceptable equivalent, to the satisfaction of MCO; or

(b) The notation **NAV1** is also to be assigned; or

(c) Where the bridge is not intended to operate a periodic one man watch, the layout of the bridge and the equipment on the bridge are to satisfy the requirements for the assignment of the notation **NAV1** to the satisfaction of MCO with the exception of requirements identified by MCO Rules that may be relaxed in such cases.

1.4.5 Machinery class notations will not be assigned to ships the hulls of which are not classed or intended to be classed with MCO.

1.4.6 The notations ✖ **LMC** and **MCH** will in general not be assigned to non-propelled craft, but individual cases will be considered on their merits.

1.5 CLASS NOTATIONS (MACHINERY SPECIAL FEATURES)

1.5.1 The following class notation is associated with onshore power supply arrangements and may be assigned as considered appropriate by the Classification upon application from the Owners:

OPS Assigned when the machinery, electrical and control engineering arrangements installed on board to permit continued operation of services by connection to an external electrical power supply have been assessed.

1.5.2 The following class notations are associated with positional mooring systems, or thruster-assisted positional mooring systems, and may be assigned as considered appropriate by the Classification Committee:

- PM** Assigned when a positional mooring system is fitted. It is not intended to apply to vessels which have station-keeping capabilities, but which are not required to remain on station in adverse weather conditions. This notation can be supplemented by a Thrust-Assisted notation **T1** [or **T2** or **T3**].
- PMC** Assigned when a positional mooring system for mooring in close proximity to other vessels or installations is fitted. It is not intended to apply to vessels which have station-keeping capabilities, but which are not required to remain on station in adverse weather conditions. This notation can be supplemented by a Thrust-Assisted notation **T1** [or **T2** or **T3**].
- GF** Assigned to ships other than LNG carriers, where the main propelling and/or auxiliary machinery is designed to operate on natural gas as fuel, or a combination of natural gas and oil fuel. The notation also indicates that the gas-fuelled machinery has been installed and tested in accordance with MCO's Rules and Regulations.

1.5.3 The following class notations are associated with machinery redundancy and may be assigned as considered appropriate by the Classification:

- PMR** This notation will be assigned where the main propulsion systems are arranged such that, in the event of a single failure in equipment, the ship will retain not less than 50 per cent of the installed prime mover capacity and not less than 50 per cent of the installed propulsion systems. It also denotes that the installation has been arranged, installed and tested in accordance with MCO Rules.
- PMR*** This notation will be assigned where the main propulsion systems are arranged such that, in the event of a single failure in equipment, the ship will retain not less than 50 per cent of the installed prime mover capacity and not less than 50 per cent of the installed propulsion systems and where the machinery is installed in separate compartments such that, in the event of the loss of one compartment, the ship will retain availability of propulsion power. It also denotes that the installation has been arranged, installed and tested in accordance with MCO Rules.
- SMR** This notation will be assigned where the steering systems for manoeuvring are arranged so that steering capability will continue to be available in the event of a single failure in the steering gear equipment or loss of power supply or control system for any steering system. It also denotes that the installation has been arranged, installed and tested in accordance with MCO's Rules.

1.6 CLASS NOTATIONS (REFRIGERATED CARGO INSTALLATIONS (RMC), CONTROLLED ATMOSPHERE (CA) SYSTEMS AND CARRIAGE OF REFRIGERATED CONTAINERS (CRC))

1.6.1 The following class notations may be assigned as considered appropriate by the Classification, on application from the Owners:

- RMC** This notation will be assigned when the arrangements of the refrigerated cargo installation have been found to be equivalent to Rule requirements, and the installation has been tested in accordance with the relevant requirements of the Rules.
- ‡ This symbol will be assigned to installations considered suitable for the carriage of fruit. It indicates that the following parameters have been assessed and found satisfactory:
- (a) The rate of air circulation and the air refreshing arrangements through the refrigerated spaces or chambers, or to containers.
 - (b) The temperature controls and monitoring arrangements.
 - (c) The installation's capability to cool down a complete cargo of fruit to its carrying temperature within a specified time.
- The symbol will also be assigned to fishing vessels that have the refrigerating capacity to freeze down their catch.
- RMC (LG)** This notation will be assigned to a classed liquefied gas carrier or tanker, in which reliquefaction or refrigeration equipment is fitted for cargo temperature and pressure control, where the equipment has been found equivalent to Rule requirements and tested in accordance with the relevant requirements of the Rules.
- RMC (BC)** Assigned to a classed chemical tanker where the equipment has been found equivalent to Rule requirements and tested in accordance with the relevant requirements of the Rules
- TC** Assigned to a classed chemical tanker where the temperature control systems have been found equivalent to Rule requirements and tested in accordance with the relevant requirements of the Rules

1.6.2 The following class notations are associated with controlled atmospheres and may be assigned as considered appropriate by the Classification, on application from Owners,

- (CA)** This notation may be assigned when a ship is fitted with arrangements for maintaining airtightness in CA zones and for the ready connection to a gas system in accordance with the relevant requirements of the Rules.
- CA (%O₂, %CO₂)** This notation may be assigned when a ship is provided with a CA system which will achieve and maintain specified ranges of oxygen and carbon dioxide levels in accordance with the relevant requirements of the Rules.
- RH** This notation may be assigned when a ship can maintain a specified relative humidity in the CA zones.

RPA Assigned to ships where the Refrigeration Machinery for Provision Stores and Air-conditioning

Before assignment of any of the above notations it is a prerequisite that the refrigeration installation is assigned an **RMC** class notation.

1.6.3 The following class notation is associated with the carriage of refrigerated cargo containers and may be assigned as considered appropriate by the Classification, on application from Owners:

✘ **CRC** This notation may be assigned when a ship is provided with a ventilation system which is approved, installed and tested in accordance with the relevant requirements of the Rules.

1.6.4 The class notation assigned will additionally specify the temperature conditions and other relevant characteristics for which the equipment has been approve.

1.6.5 The class notation assigned will be maintained as long as the installation is found, at the prescribed Periodical Surveys, to be in a fit and efficient condition, and in accordance with the requirements of the Rules.

1.6.6 The Classification Committee will give consideration to ships engaged on voyages of short duration, to installations of small capacity, or to other special circumstances. In such cases the class may include a service limitation or other restriction.

1.6.7 Refrigerating installations designed to supply refrigerated air to insulated containers in ships' holds board container ships, are eligible for classification. The installation is to include the refrigerating machinery, supply and return air ducting and the flexible couplings between containers and the duct system. Where the arrangements are such that cell air conditioning is essential to the carriage of the containers, the air Conditioning equipment and/or insulation of the hold, deckheads, sides and tank tops are to be included in the classification.

1.6.8 Other methods of carrying refrigerated cargoes in containers aboard container ships will be considered for classification on application.

1.7 CLASS NOTATIONS (MATERIALS)

1.7.1 The following materials notations are associated with material properties and may be assigned by MCO:

Z25 Steel grade with through thickness properties for normal ship applications,

Z35 Steel grade with through thickness properties for more severe applications,