Commonwealth of Dominica

Office of the Maritime Administrator

TO: **ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF MERCHANT SHIPS, MOBILE OFFSHORE DRILLING UNITS AND RECOGNIZED ORGANIZATIONS**

SUBJECT: **ANTI-FOULING SYSTEMS ON SHIPS**

REFERENCE:
(a) International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention), adopted on 5 October 2001,
(b) IMO Resolution A.895 (21) on Anti-fouling Systems used on Ships,
(c) IMO Resolution A.928 (22) on early and effective application of the Convention on the Control of Harmful Anti-fouling Systems on Ships,
(d) Regulation (EC) No 782/2003 of the European Parliament and of the Council of 14 April 2003 on the prohibition of organotin compounds on ships,
(e) CDP 101 International Maritime Act, Consolidated Edition, 2002 – Chapter I Part III – Vessel Inspection
(f) CDP 102 Dominica Maritime Regulation, Consolidated Edition, 2003 – Part II – Safety documentation and identification of vessels

PURPOSE: **The purpose of this Circular is to bring to the attention of the shipowners, operators, masters and recognized organizations of Dominica flag vessels the new European Regulation on the prohibition of organotin compounds on ships.**

APPLICABILITY: **The information contained herein is informational and presented for the benefit of the Owners and Operators of all vessels under the Dominica International Registry.**

BACKGROUND:

In the early days of sailing ships, lime and later arsenical and mercurial compounds and pesticides were used to coat ships' hulls to act as anti-fouling systems. During the 1960s the chemicals industry developed efficacious and cost-effective anti-fouling paints using metallic compounds, in particular the organotin compound tributylin (TBT). By the 1970s, most seagoing vessels had TBT painted on their hulls.

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registration@dominica-registry.com

However, it soon became clear there was a price to pay for the efficient anti-fouling paints containing TBT. Environmental studies provided evidence that organotin compounds persist in the water and in sediments, killing sealife other than that attached to the hulls of ships and possibly entering the food chain. Specifically, TBT was shown to cause shell deformations in oysters; sex changes (imposex) in whelks; and immune response, neurotoxic and genetic affects in other marine species.

In the 1970s-1980s, high concentrations of TBT in shellfish on the coast of France caused the collapse of commercial shellfisheries in at least one area, and this prompted many States to act and enforce some restrictions on the use of TBT in anti-fouling paints.

In 1988, the problem was brought to the attention of the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO), the United Nations Agency concerned with the safety of shipping and the prevention of marine pollution.

As a result, IMO in 1990 adopted a resolution recommending governments to adopt measures to eliminate anti-fouling paints containing TBT. In the 1990s, the MEPC continued to review the environmental issues surrounding anti-fouling systems, and in November 1999, IMO adopted an Assembly resolution that called on the MEPC to develop an instrument, legally binding throughout the world, to address the harmful effects of anti-fouling systems used on ships. The resolution called for a global prohibition on the application of organotin compounds which act as biocides in anti-fouling systems on ships by 1 January 2003, and a complete prohibition by 1 January 2008.

In October 2001, IMO adopted a new **International Convention on the Control of Harmful Anti-fouling Systems on Ships, which** will prohibit the use of harmful organotins in anti-fouling paints used on ships and will establish a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems.

IMO Requirements

In October 2001, the “International Convention on the control of harmful anti-fouling systems on ships, 2001”, known as the AFS Convention, was adopted by an IMO Diplomatic Conference, to ban toxic substances contained in anti-fouling systems. In particular, the Convention aims to ban TBT paints containing organotin compounds (Tributyltin TBT) that released in water act as biocides.

The AFS Convention requests to ban TBT paints according to the following schedule:

- from 1 January 2003, ships shall not apply or re-apply anti-fouling systems containing organotin compounds acting as biocides, e.g. TBT; and
- from 1 January 2008, organotin compounds acting as biocides, e.g. TBT, shall be removed from or sealed on the hull of all ships or offshore units, except fixed and

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floating platforms, FSUs and FPSOs that have been constructed prior to 1 January 2003 and have not been in dry-dock on or after 1 January 2003.

Ships of 400 GT and above engaged in international voyages, excluding fixed or floating platforms, FSUs, and FPSOs, shall be subject to surveys and to the issue of an "International Anti-Fouling System Certificate" (IAFS Certificate) to document state of compliance with the Convention.

For ships below 400 GT, of 24 meters and above in length, engaged in international voyages, the AFS Convention requests a Declaration signed by the Owner or Owner's authorized agent to be kept on board with the appropriate documentation (such as paint receipt).

The AFS Convention will enter into force 12 months after that minimum 25 countries representing at least 25% of the world gross tonnage have ratified the Convention. At the end of February 2003, only 2 countries have ratified the Convention that has therefore not yet entered into force.

In October 2002 the "Guidelines for surveys and certification of anti-fouling systems on ships", referred to in the AFS Convention as mandatory, have been adopted by Resolution MEPC.102(48). According to these Guidelines, prior to the entry into force of the Convention, an AFS Statement of Compliance may be issued to ships meeting the requirements of the AFS Convention.

EU Requirements

A European regulation EU/872/2003, aiming at banning TBT paints, was approved the 14th April 2003.

<u>According to this regulation:</u>

- from 1 July 2003, EU ships shall not apply or re-apply anti-fouling systems containing organotin compounds acting as biocides, e.g. TBT; and organotin compounds acting as biocides, e.g. TBT, shall be removed from or sealed on the hull of the EU ships whose anti-fouling systems has been applied, changed or replaced after 1 July 2003; and

- from 1 January 2008, organotin compounds acting as biocides, e.g. TBT, shall be removed from or sealed on the EU ships and **ships entering a EU port or offshore terminal.**

The above provisions shall not apply to fixed and floating platforms, FSUs and FPSOs that have been constructed prior to 1 July 2003 and have not been in dry-dock on or after 1 July 2003.

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As regards recognition of certificates and of statements of compliance as from 1 July 2003, EU Member States must recognize any AFS declaration.

RECOMMENDATIONS:

1 Shipowner, operator and master of a Dominica Flagged ship entering EU ports or offshore terminals, should be aware that, from 1 January 2008, organotin compounds acting as biocides, e.g. TBT, shall be removed from or sealed on these ships.

2 By 1 January 2008 , ships entering the EU ports or offshore terminal either:
(a) shall not bear such compounds on their hulls or external parts or surfaces; or
(b) shall bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling systems.

3 Alternative anti-fouling systems acceptable by DMRI are prescribed in the annex I to this circular.

4 **1.** Ships entering EU ports will have to demonstrate that they are totally free or that a sealer coat is present.

2. As proof of compliance required by 4.1. a Voluntary Statement of Compliance in accordance with the AFS Convention should be issued by one of Dominica Recognized Organizations.

5 **1.** Upon entry into force of the AFS Convention such Voluntary Statement of Compliance may be transferred into Statement of Compliance, without any additional surveys, provided that at that time the Voluntary SoC is valid.
2. The Statement of Compliance issued in accordance with 6.1. above shall have the same expiry date as the Voluntary SoC on which it was based.
3. If and when the Commonwealth of Dominica becomes signatory to the AFS Convention, the documents referred to in 6.1 and 6.2. above will be replaced by the certificate prescribed in the Convention.

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Annex I - Alternative anti-fouling systems to be used on ships

Alternative anti-fouling systems	
Product/method	**Advantages/disadvantages**
Tin-free anti-fouling paints	Work best on vessels that go to dry dock every three and a half years or more frequently because some fouling does occur. Works on special purpose vessels such as tugs, pilot boats, lifeboats, research vessels if these are used at least 100 days per year and go into dry dock at least every three years. When use is not as frequent they run more risk of fouling and will need dry dock every year.
Non-stick coatings	Contain no biocide but have extremely slippery surface -preventing fouling occurring and making it easier to clean when it does. Most suitable for vessels with minimum speed of 30 knots. Damage to coating difficult to repair. Light fouling occurs but easily removed with high-pressure hose in annual dry dock visits.
Cleaning	Periodic cleaning of hull is most appropriate for ships operating in both sea and fresh water and in areas where few organisms attach to hull. Cleaning of merchant ships involved divers using rotating brushes or high-pressure hoses.
Natural resistance, natural biocides	Substance produced in nature which prevent fouling or hinder fouling process -based on capacity of marine organisms such as corals and sponges to remain free of fouling. Research on use of natural compounds is in early stages, but active metabolites (for example ceratinamine and mauritiamine) have been identified and new biocides have been synthesised. E**nzymes** can break the sticking of bacteria (the first phase of fouling's growth) to the hull; while the concept of **hydrophilic coating** has been inspired by the preference of fouling to stick to hydrophobic surfaces, such as rocks and vessels. The organisms have no grip on hydrophilic 'wettish' surfaces.
Electricity	Creating a difference in electrical charge between the hull and sea water unleashes chemical process which prevents fouling. This technology shown to be more effective than tin-free paint in preventing fouling, but system is easily damaged and expensive. Also creates increased corrosion risk and higher energy consumption.
Prickly coatings	Includes coatings with microscopic prickles. Effectiveness depends on length and distribution of prickles, but has been shown to prevent attachment of barnacles and algae with no harm to environment. However, prickles could increase water resistance of vessel. Use of prickly surfaces on static objects such as buoys and cooling water inlets seen as realistic option in near future.
Copper-based antifouling paints	Already exist and less toxic than TBT in aquatic environment. Only effective against marine fauna -to combat weed growth, herbicides are added which may pose new threats to environment (not suggested).

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