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CONTROL OF ANTI-FOULING SYSTEMS ON SHIPS

(111–40)

HEARING

BEFORE THE

SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION

OF THE

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

June 10, 2009

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June 9, 2009

SUMMARY OF SUBJECT MATTER

TO: Members of the Subcommittee on Coast Guard and Maritime Transportation

FROM: Subcommittee on Coast Guard and Maritime Transportation Staff

SUBJECT: Hearing on "Control of Anti-Fouling Systems on Ships"

PURPOSE OF THE HEARING

The Subcommittee on Coast Guard and Maritime Transportation will meet on Wednesday, June 10, 2009, at 2:00 p.m., in room 2167 of the Rayburn House Office Building to receive testimony regarding the control of anti-fouling systems on ocean-going vessels. This hearing will examine anti-fouling systems that have been applied to ships in the past and discuss the contamination that some of these systems have released into the marine environment. The hearing will examine the International Convention on the Control of Harmful Anti-fouling Systems on Ships, which establishes a comprehensive regulatory framework to enable assessments of the safety of new anti-fouling systems to be made before they are approved for use.

BACKGROUND

Biological fouling is defined by the International Maritime Organization (IMO) as the unwanted accumulation of microorganisms, algae, mussels, plants, or other "biological material" on structures that are "immersed in water."[1] There are more than 4,000 species of biological organisms that can foul an immersed surface.

The fouling of a vessel's surface can produce many serious consequences. For example, fouling on a vessel's hull increases the ship's weight and slows its progress through the water, causing the vessel to burn additional fuel. Untreated, a deep draft tank vessel's hull can accumulate

[1] IMO, "Anti-Fouling Systems," at 3 (2002).

up to 6,000 tons of fouling material in less than six months of exposure to sea water.[2] Such fouling can increase a vessel's fuel consumption by up to 40 percent, causing significant economic and environmental impacts.[3] In 2000, if untreated, the cost of biological fouling could have cost the shipping industry $7.5 billion a year in extra fuel costs.[4]

The presence of biological fouling on a vessel's hull can also cause deterioration or damage to a vessel's hull through such processes as premature corrosion. Biological fouling has caused buoys to sink and accelerated the corrosion on coastal and offshore marine structures. Coastal industries and facilities that rely on seawater for cooling, firefighting, and potable water have also experienced reduced performance efficiency in their systems due to the growth of biological species in their piping. Extensive fouling can even lead to equipment failures.

Additionally, as biological material accumulates on a vessel, the vessel's hull becomes a vector (similar to ballast water) for the transport and introduction of these species into waters where they are not native. Invasive species spread from biological fouling have been observed in ecosystems worldwide including the United States, Australia, New Zealand, Port Phillip Bay and the North Sea, often having significant impact on native population ecosystems.[5]

Anti-fouling is the process of removing or preventing the accumulation of biological fouling organisms. There are many systems available to treat a vessel's hull to try to prevent fouling, including coatings that are applied like paint, underwater cleaning processes, non-stick coatings, and electricity-based systems. The Advanced Nanostructured Surfaces for Control of Biofouling (AMBIO) estimates that total expenditures on anti-fouling applications for commercial and recreational vessels exceeds $700 million a year.[6]

Throughout history, some of the substances commonly used as anti-fouling substances were lime, pesticides, and compounds containing arsenic or mercury. As with any substance applied to surfaces submersed in water, these substances "leached" their constituent compounds into sea water. Many of these substances were found to be harmful to marine life.

I. Tributylin

In the 1960s, anti-fouling coatings based on tributyltin (TBT) were developed. The TBT system appeared to be far more effective than earlier systems in preventing hull fouling, and later scientific advances yielded a product that leached very slowly and at such a consistent pace, that ships needed new applications of TBT-based coatings only at five-year intervals. This product was so successful that by the 1970s, it was the standard anti-fouling application throughout the shipping industry.

When introduced as an anti-fouling coating, TBT was known as a bactericide and fungicide. Originally, mariners believed that TBT was less harmful to the marine environment than other chemicals that had been used on anti-fouling coatings. As the number of vessels using anti-fouling

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[2] IMO, "Anti-Fouling Systems," at 3 (2002).
[3] AMBIO, "What is Biofouling and How Will the AMBIO Project Help to Solve it Through Nanotechnology," at 2.
[4] Id.
[5] IIPC Marine Anti-fouling Coatings Task Force "Invasive Species and Biofouling," at 1.
[6] AMBIO, "What is Biofouling and How Will the AMBIO Project Help to Solve it Through Nanotechnology," at 2.

paints containing TBT increased, scientists began to find high concentrations of TBT in marinas, ports, and harbors. Eventually, high TBT levels were discovered in the open seas and oceanic waters. TBT was also shown to have significant harmful effects on marine life, from small micro-organisms to shelled creatures to marine mammals – and there is some evidence that it is bio-accumulative. As larger animals consumed smaller animals, they ingested and began to accumulate the TBT present in the bodies of the smaller animals. In this way, TBT pervasively spread to all types of marine animals and their environment.

Environmental studies conducted in the 1970s and 1980s began to identify the specific impact that TBT was having on the marine environment in general, and on marine animals, in particular. TBT was identified as the cause of shell deformations in oysters off the coast of France, and of the deformation of sexual characteristics in certain populations of marine life.[7]

As new concentrations of TBT began to be identified in numerous marine ecosystems, several countries, including France and Japan, began to unilaterally ban the use of TBT – first on recreational vessels, and then on all vessels.

II. International Laws

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention) was one of the first and most important international conventions that focused on regulating and protecting the marine environment from man-made activities. The purpose of the London Convention was to encourage the control of sources of marine pollution and take the necessary steps to prevent the dumping of wastes and other matter into the sea. Currently, there are 85 parties to the London Convention, including the United States.

In 1996, the London Convention was amended and renamed the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol) to modernize the London Convention, and eventually replace it. The London Protocol was entered into force on March 24, 2006, and there are 32 parties to the Protocol.

In 1990, after several years of close scientific study of TBT's effects on the marine environment, the IMO's Marine Environment Protection Committee adopted a resolution called "Measures to Control Potential Adverse Impacts Associated with Use of Tributylin Tin Compounds in Anti-Fouling Paints." This resolution called on national governments to ban some uses of TBT, particularly in coatings that had rapid leaching rates.

In October 2001, the IMO adopted the International Convention on the Control of Harmful Anti-fouling Systems on Ships (Convention), which was written to enter into force 12 months after 25 States representing 25 percent of the international commercial shipping tonnage adopted the Convention. By January 1, 2003, Countries that became parties to the Convention were required to ban the new application of TBT coatings, and to ensure that all vessels that had a TBT-based coating remove the coating or cover it with a barrier through which it could not leach by January 1, 2008. Parties to the Convention must also ensure that no vessel of a party using anti-fouling paint containing TBT will be allowed in their ports, shipyards, or offshore terminals.

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[7] IMO, "Anti-Fouling Systems," at 6 (2002).

By September 17, 2007, 25 States (Antigua and Barbuda, Australia, Bulgaria, Cook Islands, Croatia, Cyprus, Denmark, France, Greece, Japan, Kiribati, Latvia, Lithuania, Luxembourg, Mexico, Nigeria, Norway, Panama, Poland, Romania, Saint Kitts and Nevis, Slovenia, Spain, Sweden and Tuvalu) had ratified the Convention, and on September 17, 2008, the Convention came into force.

On December 12, 2002, the United States signed the Convention; however, the Senate did not give its consent to the Convention until September 26, 2008. The United States must enact legislation to bring our laws into compliance with the requirements of the Convention to complete the ratification process.

The Convention was written so that additional anti-fouling systems can be listed among prohibited systems over time if they are harmful to the marine environment. If there is a proposal to add an anti-fouling system to the Convention, a technical group will be established by the IMO's Maritime Environmental Protection Committee to review the proposal and to assess the harmfulness and effects to the marine environmental system to determine if the anti-fouling system should be added to the list of prohibited anti-fouling systems.

III. United States Legislation

In the United States, anti-fouling systems containing organotins, which include TBT, are currently regulated under Organotin Anti-Fouling Paint Control Act of 1988 (OAPCA), 33 U.S.C. 2401-2410. In the OAPCA, organotin-based anti-fouling paints are prohibited on vessels less than 25 meters (excluding aluminum hulls, outboard motors, and external drive units) and limits the leaching rate of anti-fouling paints on larger vessels.[8] Under the OAPCA, the sale, purchase, and application of anti-fouling paint containing organotins were banned.[9] In 2008, the Bush Administration submitted draft legislation to implement the requirements of the Convention for purposes of U.S. law. The draft legislation would ultimately replace the OAPCA.

The Environmental Protection Agency has authority under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. §§ 136-136y, to impose additional requirements to the OAPCA, including training and certification requirements for persons who apply anti-fouling paints containing organotin to vessel hulls.

IV. Alternative Anti-Fouling Systems

Several working groups have been established to assist in the research and development of alternate anti-fouling systems. AMBIO is an integrated project funded by the European Union to develop non-toxic anti-fouling coatings that do not release biocides into the environment. There are approximately 31 European organizations participating in the project including universities, companies, and research institutes.

The International Paint and Printing Ink Council was formed in 1992 to facilitate international collaboration on issues affecting paint and printing ink worldwide. The United States is a participant in this Council, which researches biological fouling and invasive species.

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[8] Message from the President of the United States to the Senate Transmitting the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001, January 22, 2008, page 7.
[9] 33 U.S.C. § 2403 (2008).

As TBT has been eliminated from use in anti-fouling coatings, copper has re-emerged as a key component of such coatings. It is a naturally occurring element that is considered far less toxic to the marine environment than TBT. Copper has been used in anti-fouling for over 200 years.[10]

Non-stick coatings containing non-toxic silicone or polyurethane are also available for vessels that travel at less than 30 knots. These coatings are intended to prevent fouling by making a hull surface so slick that biological materials cannot attach to the surface or are washed off as the vessel moves through the water. Silicone-based products are, however, expensive, and they can easily be damaged through the regular travels of a ship.

PREVIOUS COMMITTEE ACTION

The Subcommittee on Coast Guard and Maritime Transportation has not held a hearing on anti-fouling systems.

WITNESSES

Mr. Jeffery G. Lantz
Director of Commercial Regulations and Standards
U.S. Coast Guard

Mr. James Jones
Acting, Assistant Administrator
Office of Prevention, Pesticides and Toxic Substances
Environmental Protection Agency

[10] International Council of Marine Industry Associations, "Fact Sheet on Copper-Based Antifouling," at 2 (2006).

CONTROL OF ANTI-FOULING SYSTEMS ON SHIPS

Wednesday, June 10, 2009

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:08 p.m., in Room 2167, Rayburn House Office Building, Hon. Elijah E. Cummings [Chairman of the Subcommittee], presiding.

Mr. CUMMINGS. This hearing is called to order.

At the beginning of the 110th Congress, one of the charges to the Chairman of the Full Committee on Transportation and Infrastructure, Congressman Oberstar, said that each Subcommittee was to protect the environment from the impacts that modes of transportation imposed on it. In our Subcommittee we have worked diligently to keep that charge by taking specific steps to lessen the impact of commercial shipping on the marine environment as well as on air quality.

Last year, for example, this Subcommittee developed and the Congress eventually passed the Maritime Pollution Act, H.R. 802, which instituted the legal changes needed to bring the United States in compliance with the International Convention for the Prevention of Pollution from Ships, MARPOL Convention Annex VI. MARPOL Annex VI limits the emissions from ships of sulfur oxide and nitrogen oxide, which are ozone-depleting substances. H.R. 802 was enacted after the Annex VI Treaty was ratified by the Senate in April, 2006, and had come into force internationally in May of 2006.

Today we convene to consider another international convention which has now come into force and to which the United States Senate has now given its consent, the International Convention on the Control of Harmful Antifouling Systems on Ships. The following is defined by the International Maritime Organization as the ″unwanted growth of biological materials such as barnacles and algae on a surface immersed in water.″

If such organisms grow on the hull of a vessel, they can add significant weight to the vessel and slow its movement through the water, thus causing it to consume more fuel and to release more polluting emissions than it might otherwise do. Additionally, as biological materials accumulate on a vessel, the vessel becomes the vector by which these plants and animals are introduced into environments in which they are not native.

The buildup of biological material on untreated surfaces can proceed at an astonishing rate. The IMO has written that if a vessel bottom is exposed to the water without any treatment, up to 300 pounds of material could gather on each square yard of the ship's hull over just a 6-month period. This could add up to 6,000 tons of weight on a deep-draft vessel.

Antifouling systems are the systems used to prevent the buildup of biological materials on a ship's hull. In the 1960s and 1970s an antifouling system was developed that relied on a compound called tributyltin, known more commonly as TBT. This compound was initially known as the most effective way of preventing fouling, and later advances in the formulation of this system required that a new coating of antifouling paint be applied only once every 5 years.

Unfortunately, TBT had not been fully studied before it was released into the marine environment and it has proven to be highly toxic to marine life, including crustaceans, fish, and even marine mammals.

TBT has caused alterations in oyster shells and has caused female dogwhelts, a type of snail, to begin to developing male sexual characteristics. There is even some evidence that TBT is boracic, meaning that larger animals can ingest it as they consume smaller animals on the food chain. Thus, the IMO reports that traces of TBT contamination have now been found even in whales.

In October of 2001, after nearly a decade of work, the IMO adopted the International Convention on the Control of Harmful Antifouling Systems on Ships, which now bans the use of TBT among Convention signatories. This Convention also establishes a system under which new antifouling coatings can be tested to assess their effect on the marine environment. Coatings can be added to the list of prohibited antifouling systems under the Convention if they are found to be harmful.

The Convention on the Control of Harmful Antifouling Systems on Ships was drafted to enter into force 1 year after 25 States, representing 25 percent of the merchant shipping tonnage in use around the world, adopted a Convention. The Convention came into force internationally on September 17, 2008. The United States Senate gave its consent to the Convention just a few days later in September of 2008.

I note that currently under the U.S. law, TBT, like all organotins, is regulated under the Antifouling Paint Control Act of 1998. Under this Act, the sale and most applications of TBT antifouling coatings in the United States are prohibited. However, the United States does not yet have the ability to prohibit vessels from other States using TBT-based antifouling coatings from entering our waters.

At this time, the United States needs to adopt the laws that will bring our Nation into full compliance with the Convention, thus completing our ratification of the Convention and finally banning the entry into U.S. waters of ships with TBT coatings. Today's hearing will help inform the development of such legislation.

I look forward to the testimony of today's witnesses and recognize our distinguished Ranking Member, Congressman LoBiondo.

Mr. LOBIONDO. Thank you, Mr. Chairman.

Last September, the Senate gave its advice and consent to the International Convention on the Control of Harmful Antifouling Systems on Ships in 2001. The Bush administration submitted draft legislation to implement the requirements of the Convention for the purposes of U.S. law, and it is my understanding that the current administration also supports legislation to implement the Convention.

The International Convention prohibits vessels of any size from being treated with certain antifouling paints that have a harmful impact on the marine environment and human health. The largest class of these toxic compounds, organotins and tributyltins, has largely been prohibited from maritime use in the United States.

Under the Convention, all ships greater than 400 gross tons that engage in international voyages would be required to be inspected for the presence of prohibited antifouling paints and systems. Additionally, smaller vessels may be required to carry some certification that they are outfitted only with approved antifouling measures.

While I support the removal of these toxic products from our waters, I think that we need to be mindful of the impacts that the Convention and any implementing legislation might have on the hundreds of thousands of recreational and commercial boat owners nationwide.

Lastly, I would like to hear more about whether the Convention will prohibit or restrict the use of other compounds currently utilized for antifouling purposes and how any new additions to the Convention would come into effect under U.S. law.

I want to commend the Coast Guard and the EPA for their work over the last 10 years to address this issue and for their stewardship of the marine environment. I look forward to working with you, Mr. Chairman, and both agencies to draft legislation to this effect in the coming months.

Mr. CUMMINGS. Thank you very much.

Mr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chairman. Thank you for having this hearing. As one of the chief defenders of the Great Lakes, let me say I am very, very concerned about the use of antifouling paints, particularly tributyltin, but also others that could contaminate the Great Lakes or any other bodies of waters in the United States. So I appreciate you holding the hearing, giving us an opportunity to hear testimony and try to make certain that we preserve and protect the waters of the United States.

Thank you. I yield back.

Mr. CUMMINGS. Thank you very much.

We will now welcome our panelists. Mr. Jeffrey G. Lantz is the Director of Commercial Regulations and Standards with the United States Coast Guard. Welcome, Mr. Lantz. Mr. James Jones is the Acting Assistant Administrator of the Office of Prevention, Pesticides, and Toxic Substances with the Environmental Protection Agency.

TESTIMONY OF JEFFREY G. LANTZ, DIRECTOR OF COMMERCIAL REGULATIONS AND STANDARDS, U.S. COAST GUARD; AND JAMES JONES, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY

Mr. CUMMINGS. Gentlemen, we will now hear from you, starting with Mr. Lantz.

Mr. LANTZ. Good afternoon, Mr. Chairman and distinguished Members of the Subcommittee. It is a pleasure to be here. And I look forward to discussing the Coast Guard's role in preventing environmental damage that can result from the use of harmful antifouling systems and our willingness to work with Congress should legislation for the International Convention on the Control of Harmful Antifouling Systems be developed.

Mr. Chairman, I ask that my written testimony be included in the record.

Mr. CUMMINGS. Without objection, so ordered.

Mr. LANTZ. Antifouling coatings and systems are designed to minimize the amount of marine growth which accumulates on a ship's hull during normal operation. Unfortunately, some of the antifouling coatings have proven extremely harmful to the marine environment and may pose risk to human health.

Organotin compounds such as tributyltin, or TBT, are particularly troublesome. They can remain in the sediments for several years. They are highly toxic to marine organisms, and bioaccumulate in fish, mammals, and birds as TBT is absorbed through the food chain. There has also been some public concern over TBT's potential harmful effects on human health.

In the 1980s, concern over these health hazards motivated many countries, including the United States, to enact legislation restricting the use of organotin antifouling systems on smaller vessels. In 1988, the Organotin Antifouling Paint Control Act was passed by Congress. Later, the International Maritime Community recognized the need for further action to control and ultimately eliminate the use of organotin compounds on ships.

Under the International Maritime Organization, the International Convention on the Control of Harmful Antifouling Systems, commonly known as the Antifouling Convention, was adopted in October, 2001, and entered into force on September 17, 2008.

The Convention prohibits the new application of organotin antifouling systems and requires existing systems to be removed or overcoated to prevent leaching. It contains surveys, certification, and inspection mechanisms to ensure international compliance, and also provides a mechanism for the inclusion of additional antifouling systems that are determined to pose too great a threat to the marine environment.

The Convention has widespread support among multiple sectors of the maritime community, including ship owners and operators and marine paint manufacturers, as it provides a single regulatory international program as well as a market for non-organotin-based hull coatings.

The United States shipyards also support the Convention, as they must currently comply with a ban on organotin coating for

vessels less than 25 meters in length and must meet strict leaching standards unique to the United States.

In support of the Convention, the United States Senate gave advice and consent to the President on September 26, 2008, for ratification of the Antifouling Convention. However, this Treaty is not self-executing. If the United States completes ratification and becomes a party, implementing legislation will be required to give it effect.

Implementing legislation on the Antifouling Convention will provide a number of positive aspects for the United States. First, it would deliver an even higher standard of environmental protection by building on the success with the Organotin Antifouling Paint Control Act of 1988, as it would expand the application of existing organotin prohibitions to all vessels, regardless of size.

It would further protect U.S. ports and other waters against organotin deposition from all foreign-flagged ships. Through the Coast Guard's robust Port State Control program, we would significantly contribute to the international effort to prevent environmental damage from harmful antifouling systems and it would enable U.S. engagement in the international effort to identify future antifouling systems that should similarly be prohibited or controlled.

In conclusion, deposit of an instrument of ratification at IMO would provide concrete evidence of the United States' continued commitment to protect the environmental health of our waters and the waters of those beyond our borders from the effects of harmful antifouling systems.

Thank you for the opportunity to testify before you today and the opportunity to provide you with the Coast Guard's view in support of the Antifouling Convention. The Coast Guard appreciates the work of our partners in the Environmental Protection Agency and we look forward to further working with them on this important issue.

Thank you again. I would be happy to answer any questions you may have.

Mr. CUMMINGS. Thank you very much.

Mr. CUMMINGS. Mr. Jones.

Mr. JONES. Good afternoon, Mr. Chairman, Ranking Member LoBiondo, and Members of the Subcommittee. Thank you for the opportunity to testify before the Subcommittee on legislation to control harmful antifouling systems on ships. I am pleased to be here with my colleague Jeff Lantz from the U.S. Coast Guard.

Mr. Chairman, I ask that my written testimony be introduced into the record.

Mr. CUMMINGS. So ordered.

Mr. JONES. Thank you. The Agency supports the passage of legislation to implement the Antifouling Treaty as a means of protecting domestic waters, safeguarding the global environment, and promoting the development of safer technologies for controlling fouling on ship hulls.

The treaty relies on rigorous scientific review as the basis of determining when controls are needed to limit the negative effects and impacts of antifouling systems. Implementation of the treaty will uphold the standing of the United States as an environmental

leader. We are eager to assist your Subcommittee and Congress in implementing the protections afforded by the treaty through legislation.

Let me provide some background. Organotin-based antifouling systems, mainly those containing in tributyltin, or TBT, are extremely effective and have long service lives, but they are extremely hazardous to aquatic organisms, including economically important species like oysters.

Research has revealed that tributyltin is a potent endocrine disrupter and immunotoxin responsible for reproductive anomalies and other adverse effects in marine animals. Additionally, tributyltin from hull coatings would persist for many years in aquatic sediment.

As the science on tributyltin has evolved, the Agency and Congress have taken steps to control the risks. The first step included prohibiting the use on smaller vessels and limiting the release rate of tributyltin from paint; the second step included regulating tributyltin paint waste in shipyards and analyzing monitoring data to see if these early controls reduce the risk. The science indicated that tributyltin levels in near coastal waters were dropping, but not enough to protect marine life.

With this science in hand, the EPA became a full partner in negotiating the international agreement and worked with the tributyltin manufacturers on a phaseout. In 2005, the Agency canceled the last remaining registration for tributyltin antifouling paint and set December 31, 2005 as the last date such products could legally be sold in this country, except as allowed under existing stocks provisions. Canceling the registration effectively prohibits the use in the United States.

The end result is that vessels that are painted with antifouling paints in the U.S. are no longer significant contributors to environmental loading with tributyltin. Unfortunately, ships that are maintained in places where tributyltin is still in use enter U.S. ports and leach tributlytin into our waters. Through the international agreement, vessels painted with tributlytin are identified and can be excluded from ports of countries that are parties.

The treaty provides a mechanism for us to protect our domestic waters from foreign tributyltin and to influence the use of tributyltin by joining in united front with parties of the treaty. New statutory authorities, especially in enforcement of the tributyltin ban, are needed to supplement our domestic controls of tributyltin by keeping tributyltin-painted vessels from other countries out of U.S. waters.

We expect other benefits resulting from the implementing of the treaty. For example, once we become a party we will be able to participate fully in the scientific evaluation of proposed controls on other antifouling systems that may be viewed as problematic in the future. In addition, we expect that because of increased pressure on tributyltin-based systems, the current movement toward developing safer alternatives will expand.

The scientific standards for evaluating the risks associated with antifouling systems as laid out by the treaty provide a roadmap for the paint and shipping industry to develop and adopt safer sub-

stitutes. Several safe and effective substitutes are already available.

In summary, the controls and process to be implemented through the Antifouling Treaty are clearly beneficial to the environment and national interests. There is much to be gained in implementing the global Antifouling Treaty at this time, and little controversy exists regarding the impacts.

Mr. Chairman and other Members, on behalf of EPA we are grateful for your work and the work of your staff in holding this hearing. Thank you for your leadership concerning this issue. We look forward to working with you.

I will be happy to answer any questions you may have.

Mr. CUMMINGS. Thank you very much.

Mr. CUMMINGS. Mr. Jones, you said in your testimony that the production and use of TBT in some parts of the world continues to pose a problem that can be addressed only through a coordinated global effort; is that right?

Mr. JONES. That is correct, Mr. Chairman.

Mr. CUMMINGS. How common is TBT on ships today? And given that the international Convention has now come into force, I mean how do you see us resolving this in the most effective and efficient manner?

Mr. JONES. If there is legislation allowing the United States to exclude ships with TBT on their hulls from U.S. waters, regardless of where they were painted with TBT, we will be able to effectively protect our marine environment from TBT.

Mr. CUMMINGS. How common is it to find TBT on ships today?

Mr. JONES. My understanding is that there are a number of Asian countries that still allow TBT to be used in shipping for antifouling purposes.

Mr. CUMMINGS. You also stated in your testimony that under the treaty, the U.S. and foreign-flagged vessels would be subject to the organotin prohibition, with the exception of ships used for government and noncommercial service. Is the TBT used on U.S. Government ships today?

Mr. JONES. I would defer to my colleague from the Coast Guard. My understanding is that there is no use of organotin hull coatings on government-owned vessels.

Mr. CUMMINGS. Mr. Lantz.

Mr. LANTZ. Thank you, Mr. Chairman. To our knowledge, the Navy does not use TBT, and hasn't for over a decade. The same with the Coast Guard. I don't believe that TBT is used on any U.S. Government vessels. It hasn't been allowed. If it was on some existing ships, it would have been—should have been coated so that there wouldn't be any leaching into the water.

Mr. CUMMINGS. Can either of you, or both of you, comment on whether TBT began to be used both in the United States and in other countries before its harmful effects on marine environment were fully understood, or whether it was introduced even though concerns about its safety existed at the time it was introduced?

Mr. JONES. Mr. Chairman, it was introduced well before we began to understand its effects on the environment.

Mr. CUMMINGS. So you think that if we had known those effects, it might not have been used as much as it has been used. Is that right?

Mr. JONES. Certainly, if it were—if a manufacturer, for example, brought TBT to the Environmental Protection Agency today to license it for this use, they would not likely obtain a license, which is what they would need to use TBT on ships.

Mr. CUMMINGS. I note that you also stated that the review process for antifouling systems will consider impacts to the shipping industry and to society of potential replacement systems. Just as we need to ensure that antifouling systems are safe for the environment, we must also ensure that they are effective in preventing the fouling.

Will new systems be assessed by the IMO to ensure that they meet performance standards?

Mr. LANTZ. Mr. Chairman, yes. The new systems will be analyzed by the IMO and looked at. As for the exact criteria, there are a number of criteria listed in the Convention that they use. I don't know those all off the top of my head, but I would provide that as an answer in the record to follow up, if that would be acceptable.

Mr. CUMMINGS. I would appreciate that.

Did you have a comment on that, Mr. Jones?

Mr. JONES. With respect to the IMO, new systems are brought before the U.S. EPA for pesticide licensing, as these are treated as pesticides in the United States, and we have licensed a number of chemicals that are relatively new for antifouling purposes in the last 10 years.

Mr. CUMMINGS. It has been stated in some industry magazines that copper will reemerge as the antifouling system of choice. Have the full effects of copper on the marine environment been evaluated and, if so, are there any concerns about the use of products based on copper?

Mr. JONES. Mr. Chairman, the Environmental Protection Agency has authorized the use of a number of copper compounds as antifouling pesticides, and we do feel like we have a significant understanding of the environmental effects of copper.

Copper does have effects on aquatic environments, but they are far less profound and pronounced than the effects observed from TBT. As you had mentioned in an earlier statement, our job is to balance the benefits and risks provided by a compound such as copper. We have found that the benefits of copper compounds for antifouling haveoutweighed the risks.

Mr. CUMMINGS. Mr. LoBiondo.

Mr. LOBIONDO. Thank you, Mr. Chairman.

Gentlemen, thank you for being here. Can you discuss what you think the impacts will be for becoming a party to the Convention? We have a couple different categories I am interested in. Whether it is recreational boaters, the average fishing vessel owner, or the average commercial boat owner in the U.S., what effects would this have on them? Any speculation about that?

Mr. LANTZ. Thank you, Mr. LoBiondo. Sir, the effect really should not have any effect by ratifying this Convention. In the U.S. the use of organotin is already essentially prohibited for use by these vessels. Therefore, us ratifying the Convention will not in-

crease the burden on those two vessel types that you cited, the rec boats and the fishing vessels.

This Convention, what it does for the U.S. is it gets larger U.S.-flagged vessels that perhaps go overseas and get this put on their bottom, or foreign-flagged ships who are not party to the Convention who come to our waters. So that is the main benefit that this Convention provides.

But as far as additional burden, I don't see an additional burden to the vessel groups that you cited.

Thank you.

Mr. LOBIONDO. These larger type U.S.-flagged vessels that might be having this treatment over there-- can you give us a guesstimate of how long you would think it would take the Coast Guard and the EPA to conduct initial surveys and certify that all applicable ships are following the legislation?

Mr. LANTZ. Thank you. If we ratified the Convention we would be obligated to survey the vessels to verify that they don't have the organotin on them. We would have to certificate them because they would need this for traveling internationally. So I would envision that as soon as we ratified the Convention, became a party, the first inspection we would conduct on all U.S.-flagged vessels would verify whether or not organotin.

Mr. LOBIONDO. No guess as to how long that would take, though.

Mr. LANTZ. The inspection cycle—I don't want to really guess on that. I can provide a more concrete answer for the record on that as we work out the implementing details.

Mr. LOBIONDO. What would they do in the meantime, before they are inspected, if this is implemented? Would it impact the abilities of U.S.-flagged vessels to engage in international voyages to countries that are parties to the Convention if they are not certified?

Mr. LANTZ. No, sir. Currently, U.S.-flagged vessels that do trade to countries that are party are already receiving a certificate of voluntary compliance with the Convention. This is issued to them by the four classification societies that we have recognized. So they are already complying with the Convention.

Mr. LOBIONDO. Thank you, Mr. Chairman.

Mr. CUMMINGS. Mr. Taylor.

Mr. TAYLOR. Mr. Lantz, I don't want to put words in your mouth, but I think you said that the U.S. fleet is more or less fully in compliance. Something to that extent. So who isn't in compliance now? Who would be affected by this as far as either a government agency or U.S.-flagged carrier?

Mr. LANTZ. Sir, I don't have an exact answer on who would be affected. To our knowledge, I don't know of any in the U.S. fleet that would be. There may be some out there that are using it that I am not aware.

Mr. TAYLOR. Let's go back to the 25-meter rule. I have got to assume there is a significant number of U.S.-flagged vessels that are over 25 meters in length. Are those vessels at the moment excluded and would be included later on as far as compliance, or are they in compliance now?

Mr. LANTZ. Under the terms of the Convention, they would be swept up under the Convention.

Mr. TAYLOR. Tell me about right now. Who does this affect as far as U.S.-flagged vessels? The rules were changed for whom?

Mr. LANTZ. For the larger vessels, those over 25 meters.

Mr. TAYLOR. Over 25 meters.

Mr. LANTZ. Yes.

Mr. TAYLOR. I think Mr. Jones had made the statement that there are safe and effective substitutes out there already, or already available. What are they? Are they as effective?

I mean, number one, if they are not as effective you, are going to see your fuel costs soar as you are dragging barnacles and other things through the sea. The second thing is you are going to be hauling your vessel more often. There is a cost associated with that, the sand-blasting, et cetera. So how certain are you of that statement?

Mr. JONES. Congressman Taylor, we are fairly certain of the statement as thanks to the fact that TBT has been phased out over the last, really, 10 years. The ingredients that are currently registered, approved for this antifouling use include zinc pyrithione; as I mentioned, a number of copper compounds. There is a compound IrgArol and a compound by the name of SEA-NINE.

Mr. TAYLOR. Does the EPA limit the percentage of copper that can go into a paint?

Mr. JONES. In our licensing decisions around any chemical, we evaluate and approve them in the context of the percent of the ingredient in it.

Mr. TAYLOR. What is the maximum copper content available now under the law?

Mr. JONES. I would need to get back to you.

[The information follows:]

Insert on Page 20, following line 424
While select elements of these performance measures go to the efficacy of systems to prevent fouling, the Convention itself is limited to evaluating the environmental soundness of new anti-fouling systems and, thus, does not contain bio-fouling efficacy performance standards per se.

The International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001 ("Convention") provides the following criteria by which the impact of anti-fouling systems on the marine environment and human health will be evaluated:

(1) an evaluation of the association between the anti-fouling system in question and the related adverse effects observed either in the environment or on human health; (2) an evaluation of the potential risk reduction attributable to the proposed control measures and any other control measures that may be considered by the technical group; (3) consideration of available information on the technical feasibility of control measures and the cost-effectiveness of the proposal; (4) consideration of available information on the other effects from the introduction of such control measure relating to the environment, shipyard health and safety concerns, and the cost to international shipping and other relevant sectors; and (5) consideration of the availability of suitable alternatives, including a consideration of the potential risks of alternatives."
-Source: International Convention on the Control of Harmful Anti-Fouling Systems on Ships, art. 6(4)(a), 5 October 2001.

The International Maritime Organization (IMO) has also convened a bio-fouling correspondence group through the Marine Environment Protection Committee to address the problem of bio-fouling, especially as it relates to the spread of invasive species, and to provide guidance on the management of bio-fouling, with a focus on the minimization of bio-fouling.

Mr. TAYLOR. Because they are very real life questions, where I have actually had boatyards complain to me that people happen to haul more often because you have significantly limited the amount of copper that can go. In fact, one brand I know of, Interlux Coppertox, was actually taken off the market because I am told it had too high a percentage of copper in it. This isn't a nebulous question.

Mr. JONES. It is a factual question. We can go back and look in our records to find what the percent allowed in active ingredients of approved products is.

Mr. TAYLOR. I guess my question is: What are the unintended consequences of this? What problems do we create by trying to solve the problem you have outlined? Has anyone bothered to ask that question?

Mr. JONES. As I mentioned, because we have a fair amount of experience, because this didn't happen overnight, it has actually been phased out for a while; we have also been monitoring the degree to which vessel owners have struggled with the transition. And thus far the transition has gone quite smoothly. That doesn't mean there won't be some issues by some individuals along the way. But in general, the transition away from TBT compounds has been pretty smooth.

Mr. TAYLOR. The next question. Mr. Lantz, this is just a practical question. We have had ongoing problems with the Coast Guard ignoring what I consider to be rebuilds overseas of Jones Act vessels, even when we show them the photographs. My boaters back home were regularly complaining that the navigation lights weren't changed when they burn out. I remember when the Coast Guard actually used to rescue people for free, as opposed to now you have got to call a commercial towing service.

Given the fact that the Coast Guard certainly appears to me to be stretched well beyond its boundaries right now with just existing missions, are you telling me that the Coast Guard now is going to be responsible for taking a bottom paint sample of every vessel that comes from overseas and they would determine, I guess at that point, whether or not the vessel can enter our waters?

What is the practical—how do you foresee this happening, because that is the way I visualize it, is that they would actually take a scraping off the bottom paint and run a test on it.

Mr. LANTZ. Congressman, normally we would look for certification by the flag state of the ship. If the certificate is there which indicates that they have compliance with the Convention, we would usually accept that.

Mr. TAYLOR. Sort of like the guy telling us he really didn't get his vessel rebuilt overseas. Right? That really does fail the commonsense test, sir.

Mr. LANTZ. If we have evidence that the certificate isn't valid, then of course we would investigate further, and if we had to take a sample, we would take a sample.

Mr. TAYLOR. So you are basically counting on someone to tell you, who has no commercial incentive to tell you, he has got every commercial incentive to use this stuff because it is going to cut down on his maintenance, get better performance, and haul his

boat less often. If he sends you a piece of paper saying he is compliant, you are going to trust him.

Mr. LANTZ. No, sir. These ships, when they show up on our shores, have a certificate issued by the government of the flagged state, the same as we would issue to the ships of our flag. It is very similar to virtually all the international conventions.

Mr. TAYLOR. Of course, another government would never try to mislead the United States.

Mr. LANTZ. Maybe. I don't know, sir.

Mr. TAYLOR. So the North Koreans—think about this. Again, what you are trying to do is well intended. All I see is one more time where we are putting rules on our vessels, raising the cost of doing business once again on an American vessel, making it that much easier for a foreign competitor to flaunt the rules, get an economic advantage over us, and no one is really going to enforce it because if they hold up a piece of paper from Panama or the British Virgin Islands or whoever that says they are in compliance, nobody is going to check to see if they really are. Is that correct?

Mr. LANTZ. Usually we do accept it on its face value unless we have evidence that there is something wrong. Then we would investigate further. We do this the same as we do virtually all of our ports.

Mr. TAYLOR. Sort of like when I handed the photographs of the ship being rebuilt in China as opposed to repaired in China. And there is a still a Jones Act vessel and no one from the Coast Guard ever bothered to look into it. Sort of like that instance?

Mr. LANTZ. Unfortunately, I don't know exactly about the situation you are talking.

Mr. TAYLOR. Thank you, Mr. Chairman.

Mr. CUMMINGS. Now, you wrote in your testimony about the harmful effects of TBT on marine organisms. Many sources have noted the chemical effects on oysters and digwhelk snails. How long does it take an organism affected by TBT to recover.

Mr. Lantz?

Mr. LANTZ. Mr. Chairman, if I could defer to the EPA on that.

Mr. JONES. Thank you, Mr. Chairman. I can't give you a specific answer to that. I can say that the TBT tends to be rather persistent in the environment. And so it does take a while for the exposure of the chemical, even after we have withdrawn it from the environment, for that exposure to actually cease.

Mr. CUMMINGS. Can the United States opt out of the IMO regulations regarding antifouling systems? Can we opt out of it?

Mr. LANTZ. Mr. Chairman, once we have signed onto the Convention, no, we cannot opt out of any particular regulation. We would get the opportunity, if the Convention were amended, we would then have the opportunity whether or not to accept that amendment. Once they are in place and we have accepted them, there is no opt-out unless we make the decision to opt out of the Convention completely.

Mr. CUMMINGS. What would be the cost of noncompliance?

Mr. LANTZ. Well, if we didn't comply after we had ratified it, certified our ships, they would be held up when they are trading internationally by those other parties. They would be subject to ports

they control by the other parties. So it would be detrimental to their commerce.

Mr. CUMMINGS. How many states representing what percentage of shipping tonnage are now parties to the Convention under the control of harmful antifouling systems?

Mr. LANTZ. Mr. Chairman, currently there are 39 countries party to the Convention, representing just about 67 percent of the world's international shipping.

Mr. CUMMINGS. Very well.

Ms. Richardson.

Mr. RICHARDSON. I have nothing.

Mr. CUMMINGS. Thank you very much. This hearing is now concluded. Thank you.

[Whereupon, at 2:44 p.m., the Subcommittee was adjourned.]

TESTIMONY OF
JAMES J. JONES
ACTING ASSISTANT ADMINISTRATOR
OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES
U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE

SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

June 10, 2009

Thank you for the opportunity to testify before the Committee on implementation of *The International Convention on the Control of Harmful Anti-Fouling Systems on Ships*, which we believe will reap environmental benefits here at home and for the world's oceans.

The Agency supports the passage of legislation to implement the anti-fouling treaty as a means of protecting domestic waters, safeguarding the global environment, and promoting the development of safer technologies for controlling fouling on ship hulls. The treaty relies on rigorous scientific review as the basis for determining when controls are needed to limit the negative impacts of anti-fouling systems, and implementation of the treaty will uphold the standing of the United States as an environmental leader. We are eager to assist the Congress in implementing the protections afforded by the treaty.

Current Authorities Reduce Domestic Inputs of the Riskiest Anti-Fouling System

Organotin-based anti-fouling systems, mainly those containing tributyltin, are extremely effective and have long service lives, but, as noted earlier by my colleague with the Coast Guard, they are extremely hazardous to aquatic organisms in general, including economically

important species like oysters. In the 1980's, research began to reveal that tributyltin was a potent endocrine disruptor[1] and immunotoxin[2] responsible for reproductive anomalies and other adverse effects in marine animals, and that tributyltin from hull coatings would persist for many years in aquatic sediments[3]. In 1988, the US enacted the *Organotin Antifouling Paint Control Act* (OAPCA), restricting the use of tributyltin anti-fouling coatings and prohibiting application on most recreational vessels. Concern about tributyltin continued to grow, and in 2005 EPA approved the registrant's voluntary cancellation for the last domestic uses of tributyltin anti-fouling paints in accordance with Section 6 of FIFRA. A pesticide product may not be legally sold or distributed in the US after the effective date of cancellation except in accordance with any existing stocks provisions affecting the product. A cancelled pesticide product may continue to be produced even though its registration (and thereby its sale and distribution) has been cancelled. Neither OAPCA nor product cancellations directly affected the use of tributyltin on ships painted overseas and traveling in US waters. Other US laws and

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[1] Peter Matthiessen and Gibbs, P.E., 1998, Critical Appraisal Of The Evidence For Tributyltin-Mediated Endocrine Disruption In Mollusks, *Environmental Toxicology and Chemistry* 17:37–43. http://www.setacjournals.org/perlserv/?request=get-abstract&doi=10.1897%2F1551-5028(1998)017%3C0037:CAOTEF%3E2.3.CO%3B2&ct=1

[2] H. Nakata, et al., 2002.Evaluation of mitogen-induced responses in marine mammal and human lymphocytes by in-vitro exposure of butyltins and non-*ortho* coplanar PCBs. *Environmental Pollution* 120:245-253, http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VB5-456WRVR-4&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=6322feec251785bc59118300be5770fe

[3] Dowson P. H.[a], et al., 1996. Persistence and Degradation Pathways of Tributyltin in Freshwater and Estuarine Sediments. *Estuarine, Coastal and Shelf Science*, 42: 551-562. http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WDV-45PTXDS-14&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=65cb701de6bc48771c06540cff4e7cf7

regulations[4] have addressed the risks associated with tributyltin in anti-fouling systems, but none had any effect on environmental inputs of organotin from sources outside the US. Under the treaty, U.S. and foreign-flagged vessels would be subject to the organotin prohibition, with the exception of ships used for government non-commercial service.

New Authorities Needed To Control Organotin From Ships Treated Outside the US

The International Maritime Organization (IMO) adopted a global ban on anti-fouling systems containing organotin biocides in 2001, as part of the anti-fouling treaty. The treaty took effect last year, The United States Senate gave advice and consent to ratification of the treaty in September 2008, but the US has not yet become a Party, because implementing legislation is needed before it can be ratified by the President. Implementing legislation will allow the US to inspect and exclude most tributyltin-treated ships from US waters, regardless of where the ship is registered, or where the TBT was applied. In response to entry into force of the anti-fouling treaty, the marine paint industry, shippers, and the cruise industry are turning to other technologies, but production and use of TBT in some parts of the world continues to pose a problem that can be addressed only through a coordinated global effort. Joining with other nations that have implemented treaty controls, we would limit the negative impacts of organotin anti-fouling systems in our own waters and throughout the world's oceans.

Implementing the Treaty Will Garner Benefits for the US

Implementation will reduce domestic and global contamination with organotin, but will promote other positive changes as well. These potential benefits will accrue on several fronts,

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[4] Regulations under Sections 304(a)and 301(a) of the Clean Water Act (water quality criteria, general vessel permit for discharges from ship).

from promoting scientific rigor in the assessment of anti-fouling systems, to preserving the benefits associated with anti-fouling technologies.

Treaty Establishes Science-Based Process for Considering Additional Controls

The treaty provides a framework for the consideration of global controls on other anti-fouling systems that may prove to be problematic in the future, the use of which may increase due to the shift away from TBT. The treaty includes detailed requirements for the consideration of proposals by Parties to add controls for other anti-fouling systems.

The treaty identifies a comprehensive data set to be evaluated in developing scientific recommendations for the IMO's Marine Environment Protection Committee. The relevant data are intended to cover all aspects of the toxicity of the material in question, its persistence, and the amount of the material entering the aquatic environment. These data elements will enable a thorough assessment of risks, and go beyond the strictly hazard-based assessments of some governments. The process laid out in the treaty is intended to guarantee the use of robust scientific analysis in decision-making on proposed controls. Transparency is also an important consideration in developing the US government position on any proposed control.

Process Preserves the Benefits of Anti-fouling System Use to Industry

Consideration of a proposed control includes an assessment of impacts to the shipping industry, particularly the operating and energy costs or savings that may be associated with restrictions on a problematic anti-fouling system and the use of alternative systems. By identifying the characteristics that make an anti-fouling system vulnerable to controls, the process also communicates to industry expectations for a new generation of anti-fouling systems.

Preserves Benefits to Energy Use, Air Quality, and Environmental Health

The review process also includes consideration of the impacts to society of controls and the use of potential replacements. Anti-fouling systems that do not adequately prevent the growth of fouling organisms result in increased drag on the vessel hull, increased fuel consumption, and increases in air pollution[5]. Possible benefits of a proposed control on the potential spread of invasive species, biodiversity, and environmental and human health are also relevant. Controls on anti-fouling systems under the treaty will be designed to prevent undesirable trade-offs in environmental and societal impacts. In considering both risks and benefits, the review process parallels our domestic assessment processes. Amendments to the Convention for the regulation of new antifouling systems would need to be approved by two-thirds of the Parties, taking into account the recommendations of the technical group's evaluation. The US may opt out of any such amendments, but the Treaty's rigorous review process should minimize the need to do so.

Other Benefits of Implementing the Treaty

The US developed the base text of the treaty and led the negotiations that resulted in the international agreement. Ratifying and implementing the treaty now would maintain our traditional position as a global environmental leader and may enhance our influence in other international environmental negotiations. As relates to the anti-fouling treaty itself, US ratification at this time would allow us to participate fully, as a Party, in the assessment of proposed future controls under the treaty.

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5 L.D. Chambers, et al. 2006 Modern approaches to marine antifouling coatings. *Surface and Coatings Technology*, 20: 3642-3652

Conclusion

The controls and process to be implemented through the anti-fouling treaty are clearly beneficial to the environment and national interests. There is much to be gained in implementing the global anti-fouling treaty at this time and little controversy about the impacts. The Agency is grateful for the opportunity to speak on behalf of implementation and ready to assist Congress in its efforts to move forward with the environmental protections it affords.

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DEPARTMENT OF HOMELAND SECURITY

UNITED STATES COAST GUARD

STATEMENT OF

MR. JEFFREY LANTZ
DIRECTOR, COMMERCIAL REGULATIONS AND STANDARDS

ON

SHIP ANTI-FOULING SYSTEMS

BEFORE THE

SUBCOMMITTEE ON COAST GUARD AND MARINE TRANSPORTATION

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

U. S. HOUSE OF REPRESENTATIVES

JUNE 10, 2009

Good morning Mr. Chairman and distinguished Members of the Subcommittee. I am Jeffrey Lantz, the Coast Guard's Director for Commercial Regulations and Standards. It is a pleasure to be here today, and I look forward to discussing the Coast Guard's role in preventing the environmental damage that can result from the use of harmful anti-fouling systems. Further, I am glad to have the opportunity to express our willingness to work with Congress should legislation for the International Convention on the Control of Harmful Anti-fouling Systems be developed.

Anti-fouling coatings and systems are designed to minimize the amount of marine growth which accumulates on a ship's hull during normal operation. Assemblages of marine organisms on ship hulls, known as hull fouling, can increase ship operating costs, fuel consumption, and harmful gas emissions.[1] However, some of the anti-fouling coatings designed to inhibit marine growth on hulls have proven extremely harmful for the marine environment and may pose a risk to human health[2]. These biocides can have significant impacts on the marine environment when, as a result of leaching from vessel hulls or deposition from shipyard activities, they enter the water column and embed in the sediments. Organotin compounds, such as tributyltin (or TBT), are particularly troublesome: they can remain in sediments for several years; are highly toxic to marine organisms; cause malformations and mutations in shellfish; and bioaccumulate in fish, birds, and marine mammals as TBT is absorbed via the food chain.[3] There has also been public concern about TBT's potential health effects in humans, however, this concern is still under study.[4]

In the 1980s, concern for the health of both the marine environment and the humans who interact with it motivated many countries, including the United States, to enact legislation restricting the use of organotin anti-fouling systems; focused particularly on small vessels, the Organotin Anti-fouling Paint Control Act was passed by Congress in 1988.

The international maritime community also recognized the need to control and ultimately eliminate the use of organotin compounds on all vessels. Given the higher levels of organotin compounds detected in ship channels and harbors, it was appropriate that an international solution to the harmful anti-fouling system problem would be found through the International Maritime Organization (IMO). The International Convention on the Control of Harmful Anti-fouling Systems, commonly known as the Anti-Fouling Convention, was adopted internationally by the IMO at the Diplomatic Conference in October 2001; after the requisite number of Flag States deposited their instruments of ratification to the IMO, the Anti-Fouling Convention entered into force on September 17, 2008. . The Convention prohibits the new application of listed anti-fouling systems, and, for all but a few existing vessels, it imposes a requirement that organotins be removed from hulls or over-coated to prevent leaching. Through survey, certification, and inspection mechanisms, the Convention provides the means for ensuring international compliance. The Convention provides the appropriate means for addressing any other hull-fouling systems that might later be determined to pose

[1] Focus on IMO. 2002. Anti-fouling systems. International Maritime Organization, London, UK
[2] U.S. EPA.2003. Ambient aquatic life water quality criteria for tributyltin (TBT).Office of Water, EPA, Washington, D.C. December 2003. EPA 822-R-03-031
[3] Ibid
[4] Antizar-Ladislao, 2008. Environment International 34 (2008) p 301

too great a threat to the marine environment. It also addresses other important issues related to harmful anti-fouling systems, including the prevention of environmental harm during the removal of those systems.

The Convention has wide-spread support among multiple sections of the maritime community. The marine paint and coatings industry favors the Convention, since it will provide a single regulatory program for all countries throughout the world as well as a market for non-organotin-based hull coatings. For similar reasons, ship owners and operators favor the Convention because it will level the playing field by requiring all vessels operating in international trade to adhere to the restrictions on organotin hull coatings and spur development of alternatives. Shipyards in the United States also support the Convention since they already must comply with the ban on organotin coatings for vessels less than 25 meters in length and must meet stringent leaching standards that are unique to the United States.

The Anti-Fouling Convention's role in protecting the environment has been recognized in other international instruments; the recently-adopted International Convention for the Safe and Environmentally Sound Recycling of Ships incorporates Anti-Fouling Convention controls to prevent the deposition of harmful anti-fouling systems in the ship recycling process.

In support of this international framework for addressing the harmful anti-fouling system issue, the United States Senate gave advice and consent to the ratification of the Anti-Fouling Convention on September 26, 2008. Before the United States can become a party, however, implementing legislation needs to be enacted so that the United States fullfill the Convention's obligations.

Implementing legislation for the Anti-Fouling Convention would allow the United States to deliver an even higher standard of environmental protection by building upon the successes already achieved through such laws as the Organotin Antifouling Paint Control Act of 1988 (OAPCA). Legislation consistent with the requirements of the Anti-Fouling Convention would expand the application of existing prohibitions in OAPCA to all ships, regardless of size. It would help protect U.S. ports and other waters against organotin deposition from foreign vessels. In addition to preventing new application of organotin compounds, implementing legislation consistent with the Anti-Fouling Convention would create removal or over-coating requirements for vessels with existing organotin anti-fouling systems.

Implementing legislation would allow the United States to assist in the international effort to prevent damage to the environment through the deposition of harmful anti-fouling systems. Such legislation would give us the opportunity to promote international compliance through use of the robust U.S. Port State Control system. Legislation would allow for the involvement of U.S. agencies in the scientific and technical groups established under the Convention. Deposit of an instrument of ratification at IMO would provide concrete evidence of the United States' continued commitment to protecting environmental health from the effects of harmful anti-fouling systems.

In order to ensure that U.S. vessels can prove their compliance with the requirements of the Convention in the ports of Party States, the United States, as a party, could issue International Anti-Fouling System Certificates to its vessels.

I appreciate the opportunity to provide you with U.S. Coast Guard views in support of the Anti-Fouling Convention. As a party to the Anti-Fouling Convention, we can protect the health of our waters from harmful anti-fouling systems. By participating in this international agreement, we can help make a positive impact on the health of the marine environment beyond U.S. borders. We appreciate the work of our partners at the Environmental Protection Agency and look forward to further work with them on this important issue.

Thank you for the opportunity to testify before you today. I will be happy to address any questions you may have.

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