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UK Defence Club
10th November, 2020

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Legal Issues – past, present and future…

Mark Beare

10th November, 2020

UKDC IS MANAGED BY THOMAS MILLER

Cleaning time – on or off-hire?
The Rijn [1981] 2 Lloyd's Rep. 267

- **The Facts:**
- 4 month period c/p – NYPE form
- 3 month wait at Lourenco Marques, Mozambique (Load port)
- Performance adversely affected during the laden passage due to hull fouling
- u/w cleaning necessary at Cape Town

- **The Claim**
- Charterers - vessel is off-hire basis a "defect in the hull"
- Owners – vessel on-hire since fouling was a consequence of Charterers' orders.

- **The Decision**
- Vessel on-hire during u/w cleaning
- 3 month stay was abnormally long and "wholly unexpected"

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Cleaning cost – Owners' or Charterers' Account?

The Kitsa [2005] 1 Lloyd's Rep. 432

- **The Facts:**
  - 4 to 6 month period c/p, NYPE form
  - 3 week delay at Visak, India waiting to discharge
  - Hull Fouled as a result and Owners had to arrange cleaning
- **The Claim**
  - Owners – cleaning costs for Charterers - fouling a direct consequence of complying with Charterers' orders (i.e. Implied Indemnity under clause 8)
- **The Decision**
  - Costs for Owners' account and vessel off-hire
  - Delay was not outside Owners' reasonable expectation and consequential fouling was foreseeable.
  - Costs considered ordinary expenses for Owners' account

Underperformance – Owners' or Charterers' Risk?

Coral Seas [2016] EQHC 1506 (Comm)

- **The Facts:**
  - 4 week delay in Brazil
  - Hull Fouled and the vessel underperformed as a result
- **The Claim**
  - Charterers – u/p claim
  - Owners – u/p a consequence of complying with Charterers' orders (i.e. Implied Indemnity under clause 8)
- **The Decision**
  - Charterers' u/p claim succeeded.
  - Hull fouling not within scope of Implied Indemnity (following *The Kitsa*)

Summary

Unless the period of delay can be considered abnormal, the risk of hull fouling is an ordinary trading risk in relation to which the ship owner is compensated by the hire payable under the charter party.

BIMCO Hull Fouling Clause for Time Charter Parties 2013 & 2019

(a) If, in accordance with Charterers' orders, the Vessel remains at or shifts within **a place, anchorage and/or berth / or between waiting areas, ports, places, anchorages and/or berths, and does not in the interim undertake a sea passage with speed and duration sufficient to remove the marine growth from the Vessel's underwater parts resulting from the Vessel's waiting there,** for an aggregated period exceeding:

(i) a period as the parties may agree in writing in a Tropical Zone or Seasonal Tropical Zone*; or
(ii) a period as the parties may agree in writing outside such Zones*

any warranties concerning speed and consumption shall be suspended pending inspection of the Vessel's underwater parts including, but not limited to, the hull, sea chests, rudder and propeller.

*If no such periods are agreed the default periods shall be 15 days.

(b) In accordance with sub-clause (a), either party may call for inspection which shall be arranged jointly by Owners and Charterers and undertaken at Charterers' risk, cost, expense and time.

(c) If, as a result of the inspection either party calls for cleaning of any of the underwater parts, such cleaning shall be undertaken by the Charterers at their risk, cost, expense and time in consultation with the Owners.

(i) Cleaning shall always be under the supervision of the Master and, in respect of the underwater hull coating, in accordance with the paint manufacturers' recommended guidelines on cleaning, if any. Such cleaning shall be carried out without damage to the Vessel's underwater parts or coating.

(ii) If, at the port or place of inspection, cleaning as required under this Sub-clause (c) is not permitted or possible, or if Charterers choose to postpone cleaning, speed and consumption warranties shall remain suspended until such cleaning has been completed.

(iii) If, despite the availability of suitable facilities and equipment, Owners nevertheless refuse to permit cleaning, the speed and consumption warranties shall be reinstated from the time of such refusal.

(d) **Inspection and/or** Cleaning in accordance with this clause shall always be carried out prior to redelivery. If, nevertheless, Charterers are prevented from **inspecting and/or carrying out such** cleaning, the parties shall, prior to but latest on redelivery, agree a lump sum payment in full and final settlement of Owners' costs and expenses arising as a result of or in connection with the need for cleaning pursuant to this clause.

(e) If the time limits set out in Sub-clause (a) have been exceeded but the Charterers thereafter demonstrate that the Vessel's performance remains within the limits of this Charter Party the vessel's speed and consumption warranties will be subsequently reinstated and the charterers' obligations in respect of inspection and/or cleaning shall no longer be applicable.

Voyage 1 – Key Facts

- Vessel fixed on a 4 month period c/p basis NYPE form.
- Vessel waits at the load port (within tropical zone) anchorage for 20 days.
- Vessel's hull is fouled as a result. Vessel underperforms during the laden passage and hull cleaning is required.

	Basic Principles	BIMCO 2013 (basis 15 day limit)	BIMCO 2019 (basis 15 day limit)
Time	Owners	Charterers	Charterers
Cleaning Costs	Owners	Charterers	Charterers
U/P Claim	Owners	Charterers	Charterers

Voyage 2 – Key Facts

- Vessel waits at the load port (within tropical zone) outer anchorage for 10 days.
- Vessel shifts to the inner anchorage where she remains for a further 10 days. Loading is completed within 2 days.
- Vessel's hull is fouled as a result. Vessel underperforms during the laden passage and hull cleaning is required.

	Basic Principles	BIMCO 2013 (basis 15 day limit)	BIMCO 2019 (basis 15 day limit)
Time	Owners	Owners	Charterers
Cleaning Costs	Owners	Owners	Charterers
U/P Claim	Owners	Owners	Charterers

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Biofouling?

- California (USA)
  - Biofouling Management Plan (“BMP”) a requirement since 2003
- IMO
  - Vessel’s recommended to have in place a BMP since 2011.
- USA
  - Biofouling Management Plan (“BMP”) a requirement since 2012.
- New Zealand
  - World leader – very strict compliance criteria!

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Thank you.

Any questions?

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Underwater Diving Activities – Risks

Ansuman Ghosh

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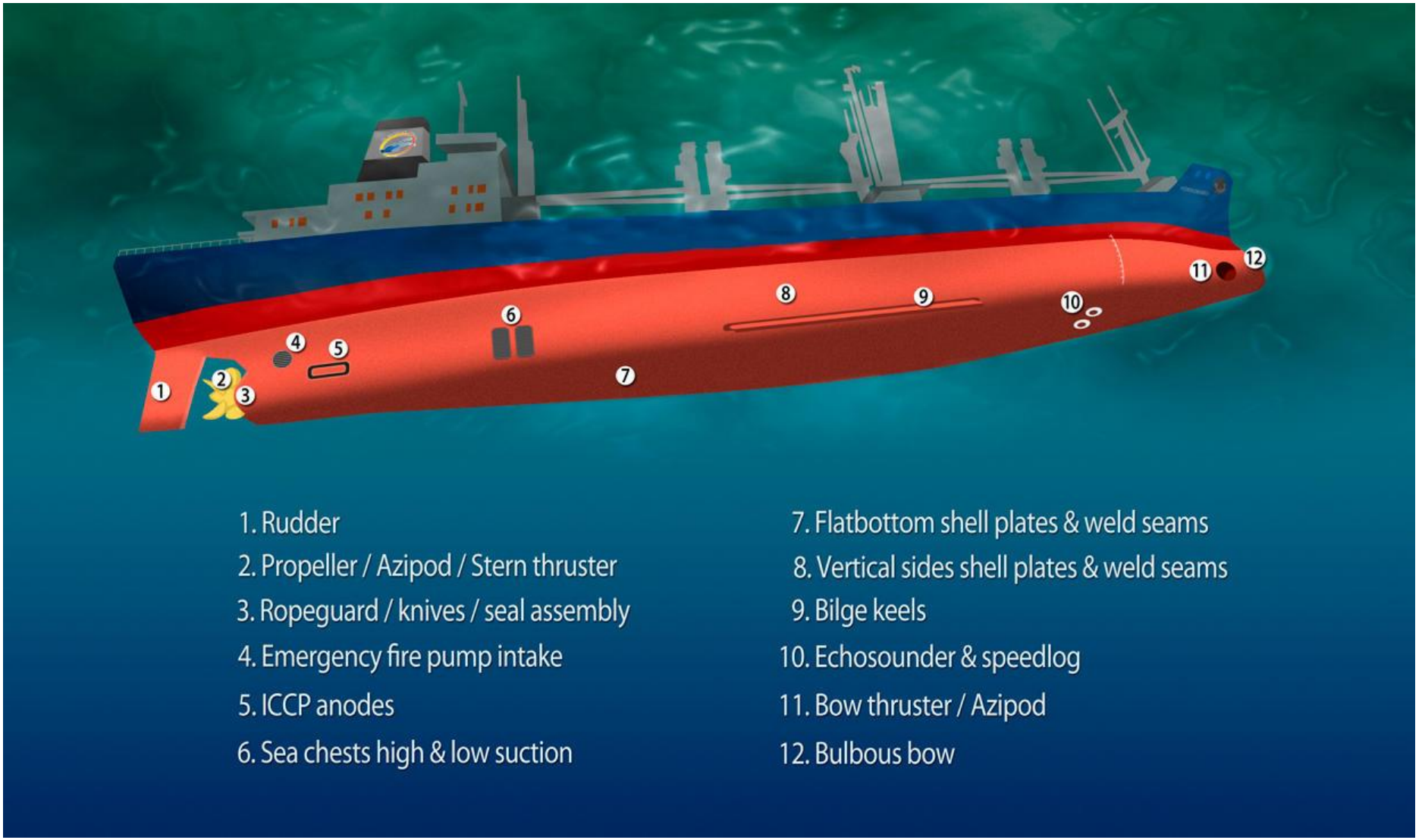
The Underwater Hull

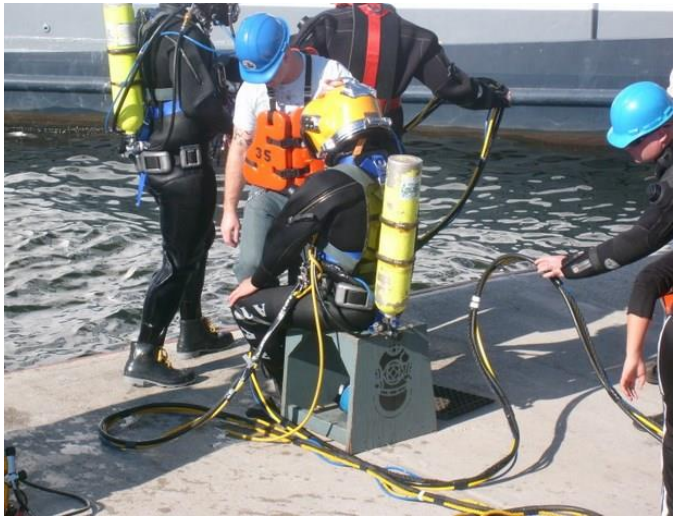


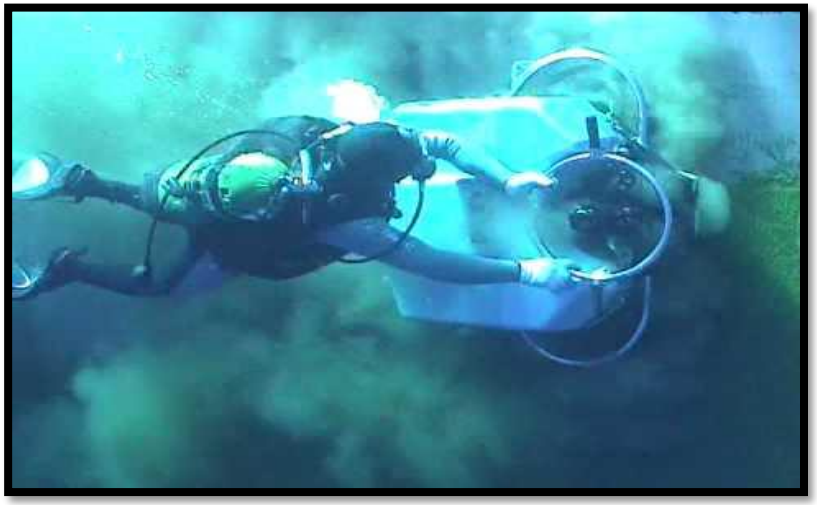
Diving Boat- Air Supply and Communication

8 CYLINDER AIR BANKS FRAMED UP

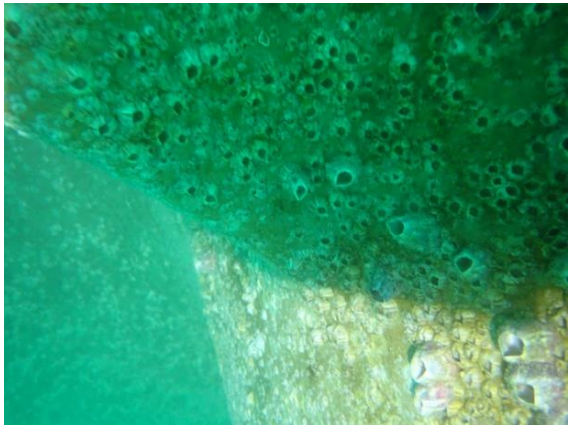
2 DIVER AIR DIVING PANEL WITH CCTV SCREEN AND CONSOLE

Diving Boat - Hull Cleaning

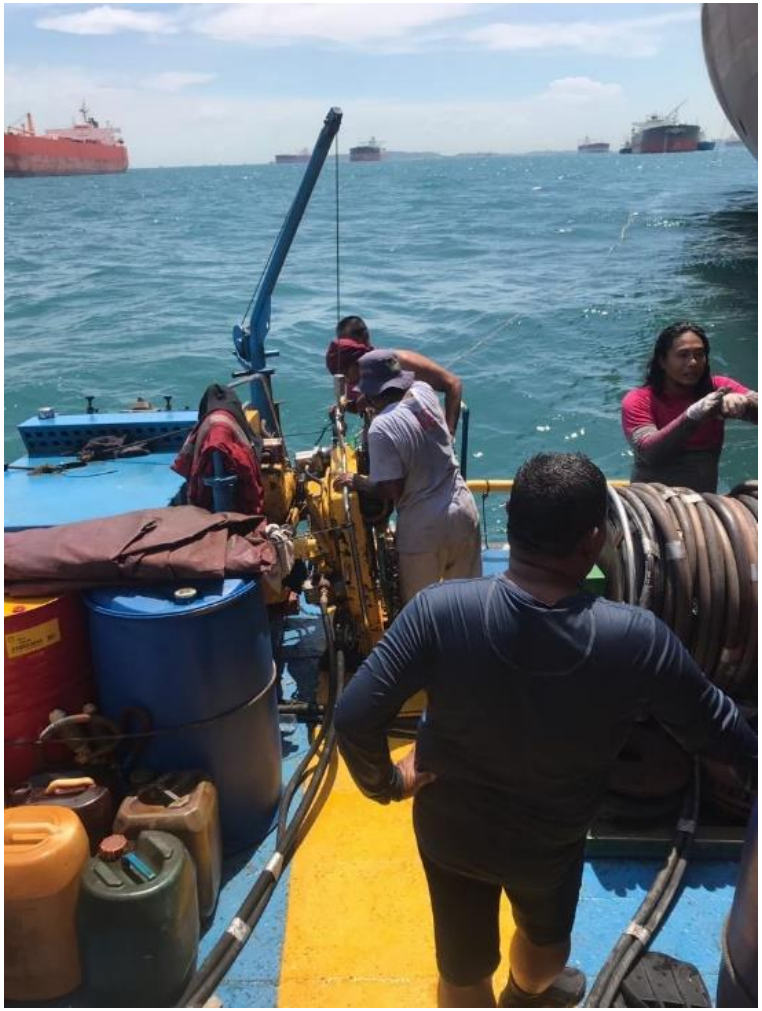


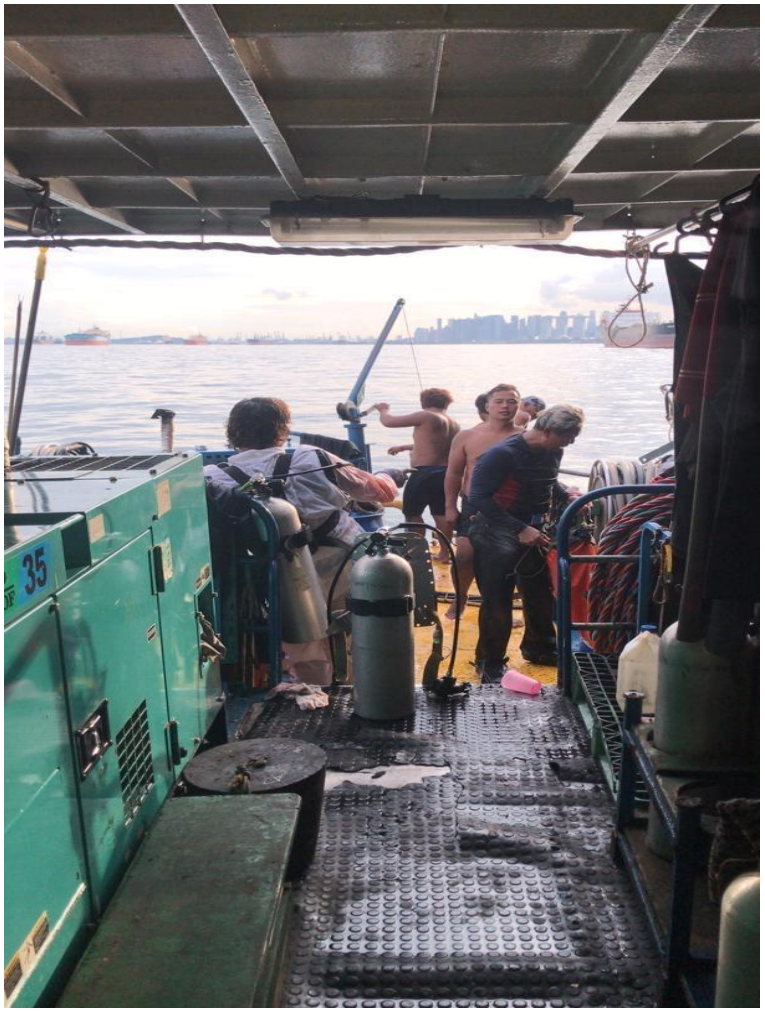


Propeller Polishing



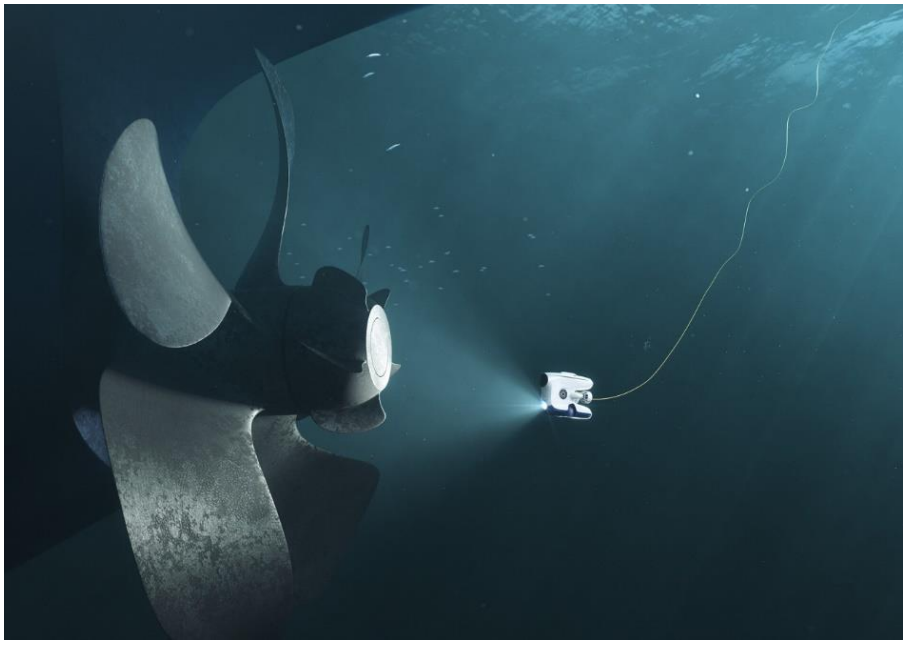
Divers at Work



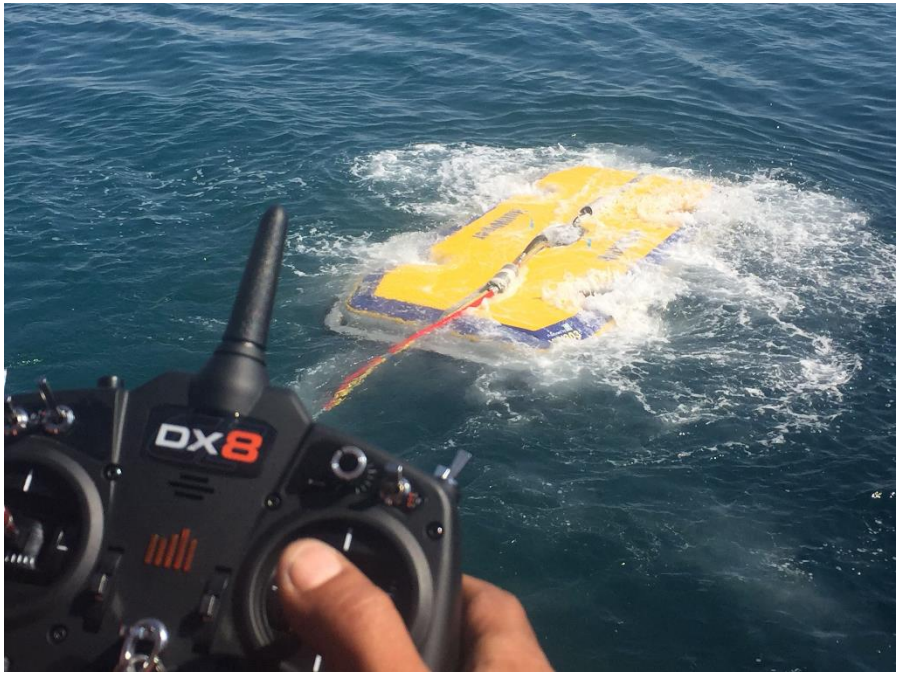


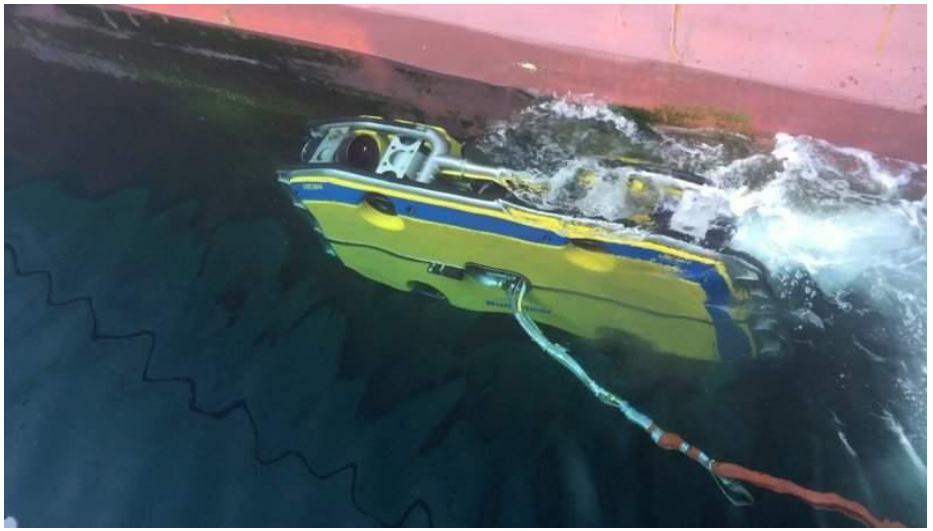
- Favourable current window
- Visibility
- Vessels draft
- Number of divers, underwater time limit
- Other boats/supply vessels
- Diving equipment
- Type of fouling
- Divers skill and certification

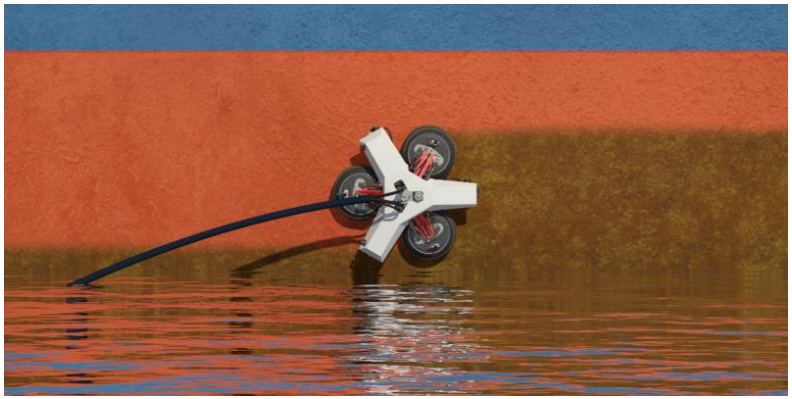
New Technology - Inspection



ROV for Hull cleaning







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Thank you.

Any questions?

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Determining Fouling Origins

Dr. Daria Hinz

November 2020

Contents

Why Do We Care About Fouling?

- Losses in speed and performance
- Delays associated with hull cleaning
- Costs of hull cleaning
- Costs of paint damage
- Early drydocking delays and costs
- Regulatory controls relating to biofouling management

What is Fouling?

Soft Fouling

- Anemones, hydroids, tunicates (sea squirts), algae, etc.

Hard Fouling

- Barnacles (acorn and goose neck), oysters, mussels, tubeworms

Progresses from:

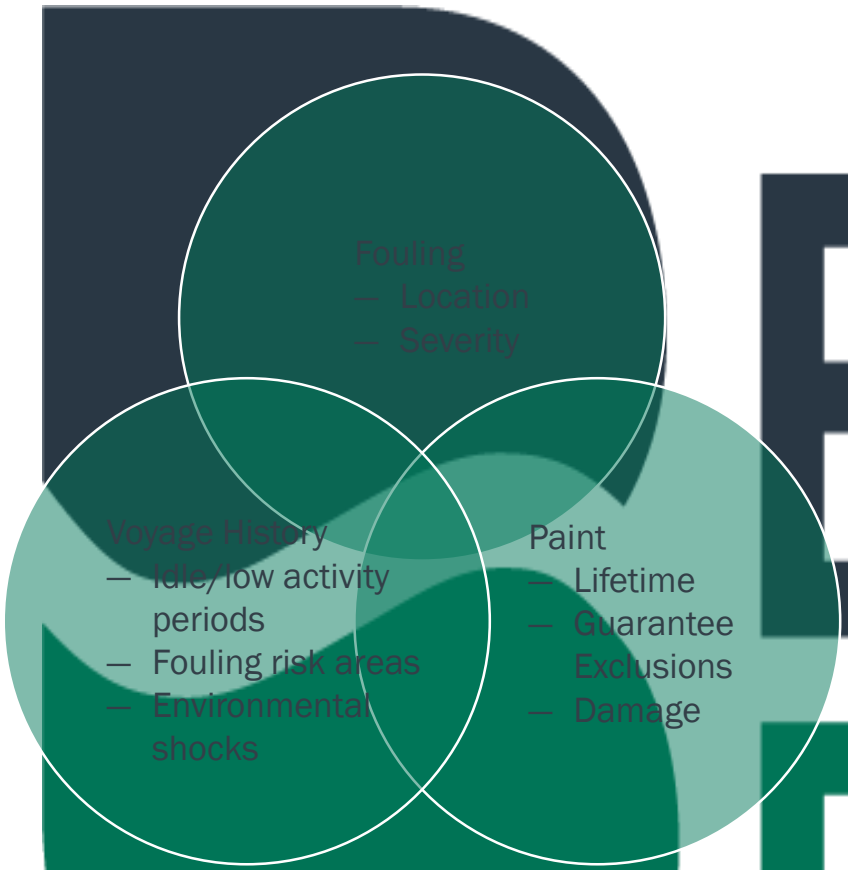
Formation of a biofilm →

Settlement of algae and diatoms →

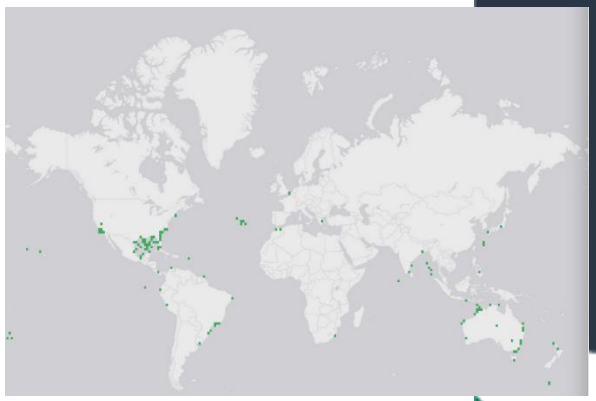
Settlement of larvae

How Old is This Fouling?

Determining Fouling Origins

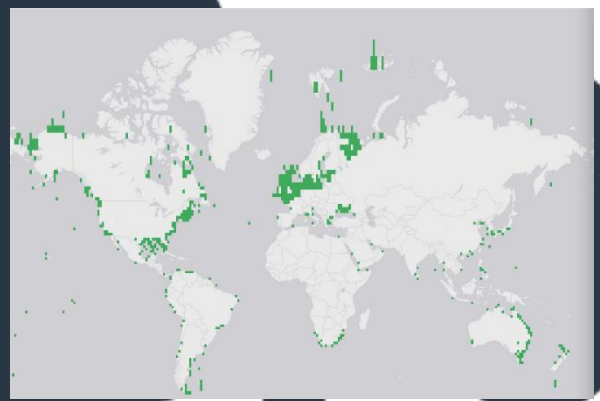


Origin of a Species



Megabalanus

Amphibalanus



Balanus

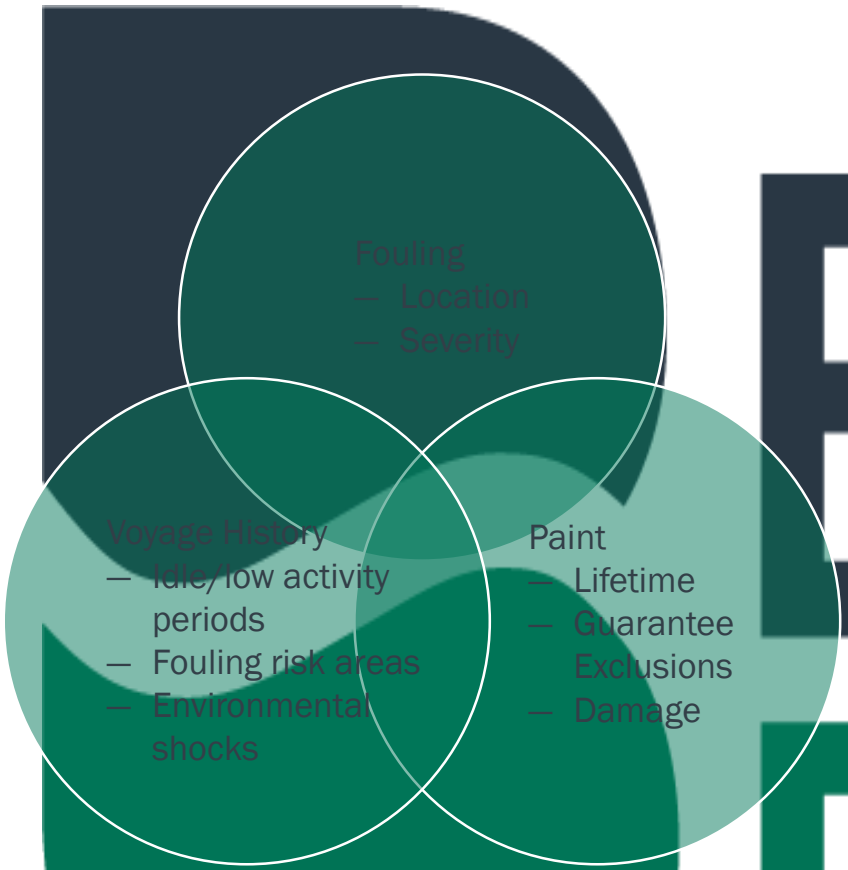
OBIS (2019) Global map showing distribution of three Balanidae genera. (Available: Ocean Biogeographic Information System. Intergovernmental Oceanographic Commission of UNESCO. www.iobis.org. Accessed: 2019-11-19)

Why Barnacles

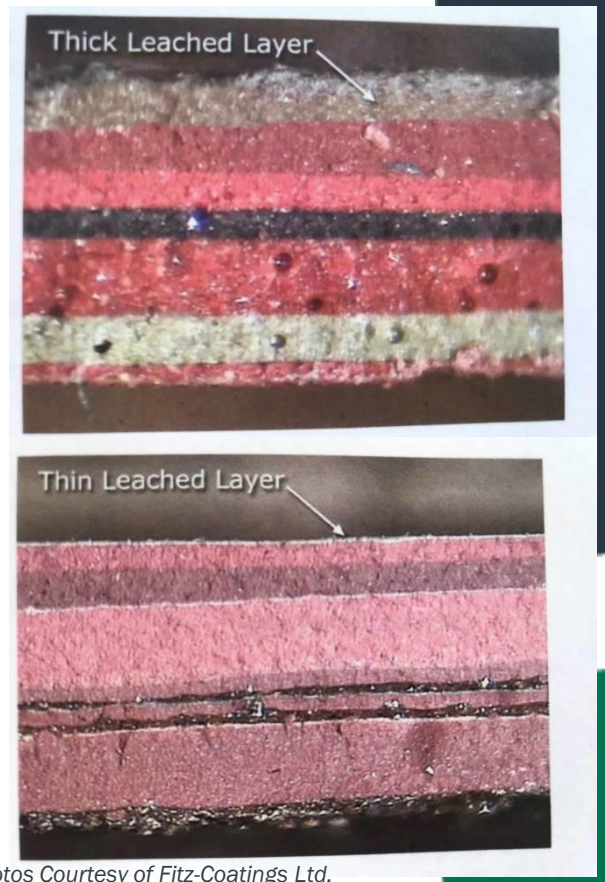
Why Barnacles

Species/Genus	Growth Rate (mm/day)	Measurement
M. peninsularis	0.08	basal diameter, average
M. azoricus	0.08	basal diameter, maximum
A. amphitrite	0.12	basal diamter, average
A. amphitrite	0.07	basal diameter, average
A. amphitrite	0.16	basal diameter, average
B. trigonus	0.06	basal diameter, average
B. trigonus	0.04	basal diameter, average
B. trigonus	0.20	basal diameter, average
B. trigonus	0.32	basal diameter, maximum
B. trigonus	0.26	basal diameter, average
Balanus sp including *trigonus*	0.14	basal diameter, maximum
B. trigonus	0.04	basal diameter, maximum
B. amphitrite	0.16	basal diameter, maximum
B. eburneus	0.23	basal diameter, maximum

Determining Fouling Origins



Fouling Paint Types



Photos Courtesy of Fitz-Coatings Ltd.

Controlled Depletion Polymer (CDP)

- Rosin-based
- As biocide is released from the paint matrix, a leached layer of insolubles is left behind, making biocide release reduce over time
- Usually 36-month lifetime
- Usually 14 day idle guarantee

Self Polishing Copolymer (SPC)

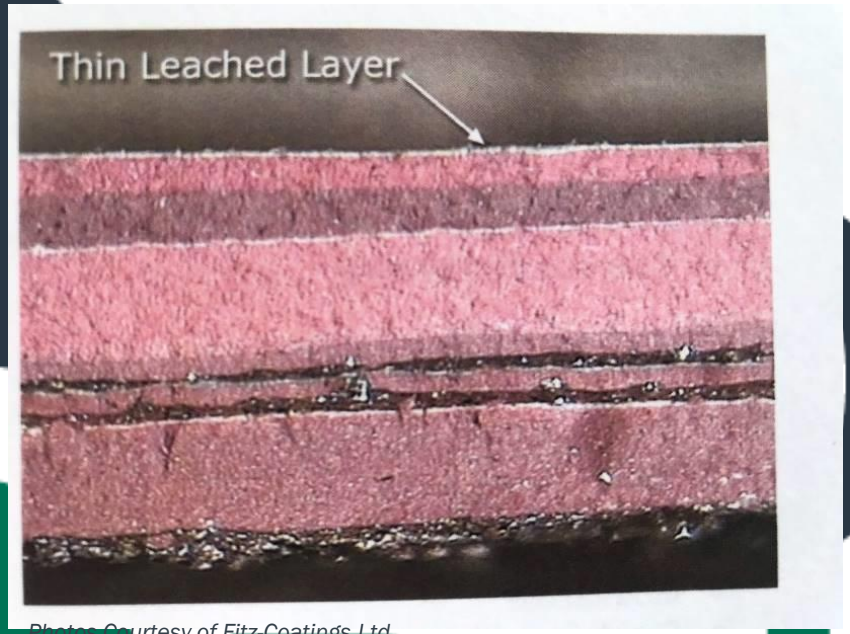
- Soluble matrix means thin leached layer and a steady biocide release
- Usually 60-month lifetime
- Usually 21+ day idle guarantee

Foul Release (FR)

- Silicone-based, fouling has difficulty attaching to slippery surface

An Example Paint Spec

- Example: a TBT free SPC (self-polishing copolymer) antifouling
- Guaranteed for a service period up to 60 months
- EXCLUDING lay up or other detainment exceeding 21 days
- EXCLUDING activity periods where the sailing speed is 10 knots or less for 15% or more of the sailing time over a period of 30 days

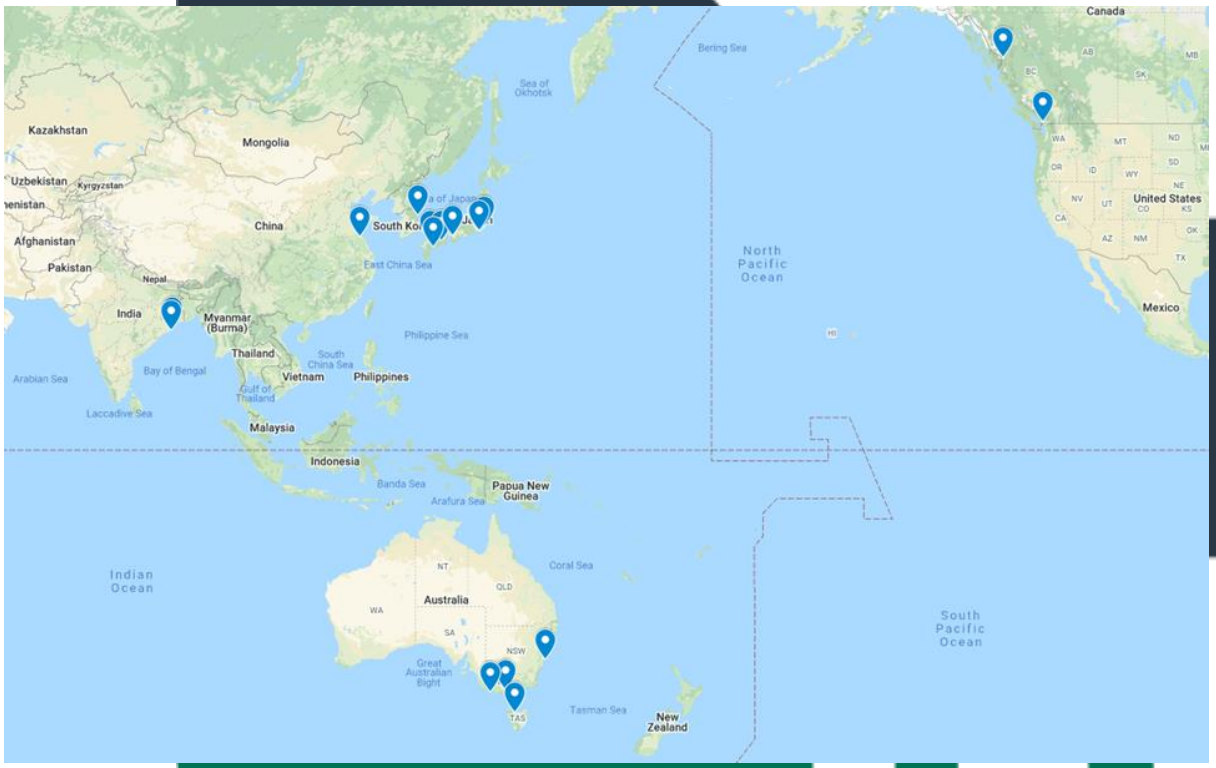


Photos Courtesy of Fitz-Coatings Ltd

Paint Damage

Determining Fouling Origins

Voyage History

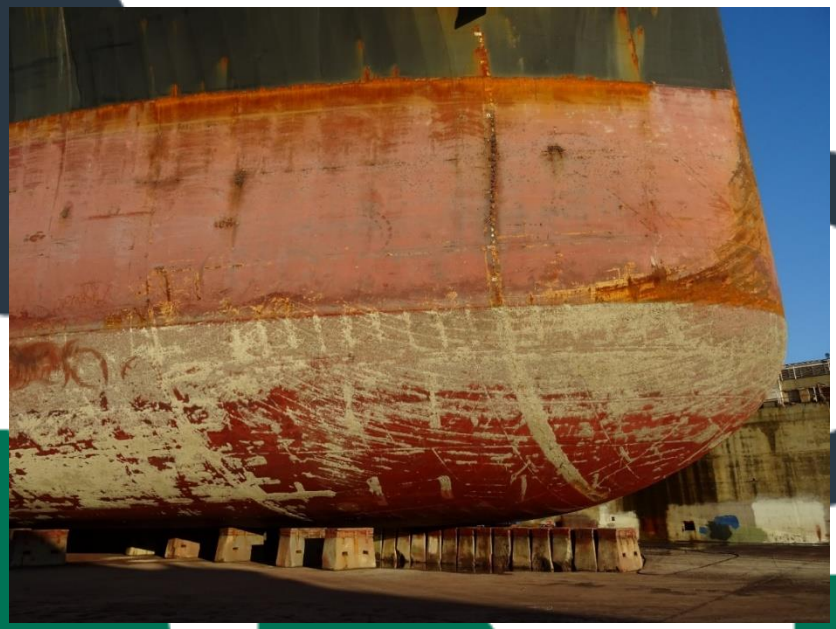


Common Disputes

- A long idle/low activity period in warm but not “tropical” waters
- A long idle period broken up by shifts between nearby ports
- Fouling noted very soon after hand over
- Severe fouling noted after a single long idle period, for eg. one month or less
- Fouling noted close to a vessel’s next scheduled drydocking
- Fouling noted despite regular activity and/or low risk environmental conditions
- Fouling in discrete areas associated with discoloured paint

What We Do

- Review available documentation and provide expert opinion on:
    - Fouling origin
    - Paint condition
    - Effects of previous cleanings
- Expert advice on or attendance for gathering samples/photographic/video evidence.
- Expert advice on or attendance for coatings inspections.
- Expert advice on current and emerging hull fouling regulations.



Review

- Voyage history
- Antifouling specification, including any guarantee exemptions for idle periods and low activity
- Drydocking report
- Underwater inspection/cleaning reports including high resolution photographs/videos
- Samples of fouling and/or paint

Inspection

Underwater Inspection and Sampling Protocol – Updated 26 April 2019

1. Video footage showing the entire hull, ship's sides to the maximum load level, the propeller, and water inlets, giving a general idea of the extent of fouling and the type (i.e. algae, soft invertebrates, or shelled invertebrates) as well as the condition of the paint. It is very important that the diver proceeds very slowly and fully faces the hull surface so that the video is in focus. Traveling along a rope instead of swimming may assist the diver in moving steadily.

2. Notes on the type of fouling - i.e. in general what type of organisms are present - weed/grass, soft bodied organisms such as anemones or sponges, or hard bodied organisms such as barnacles or oysters.

3. Notes on the paint condition in general - are there any areas of physical damage or deterioration? If so, how deeply does the damage extend, i.e. top coat only? To the underlying primer? To the ship's steelwork? Does the pattern of the damage (if any) indicate what may have caused it, i.e. circular scrapes from previous cleanings, longitudinal scrapes from contact with an obstacle in the water?

4. Notes on the paint condition in the areas affected by marine growth - i.e. is there physical damage or deterioration in these areas?

5. Clear photographs and scraped samples from both sides of the hull at the bow, midships, and stern areas starting at the waterline and proceeding down to the keel. For example, at the waterline, halfway to the keel, and the keel. If the hull fouling is localised rather than widespread, photographs and samples may be taken from only the fouled areas.

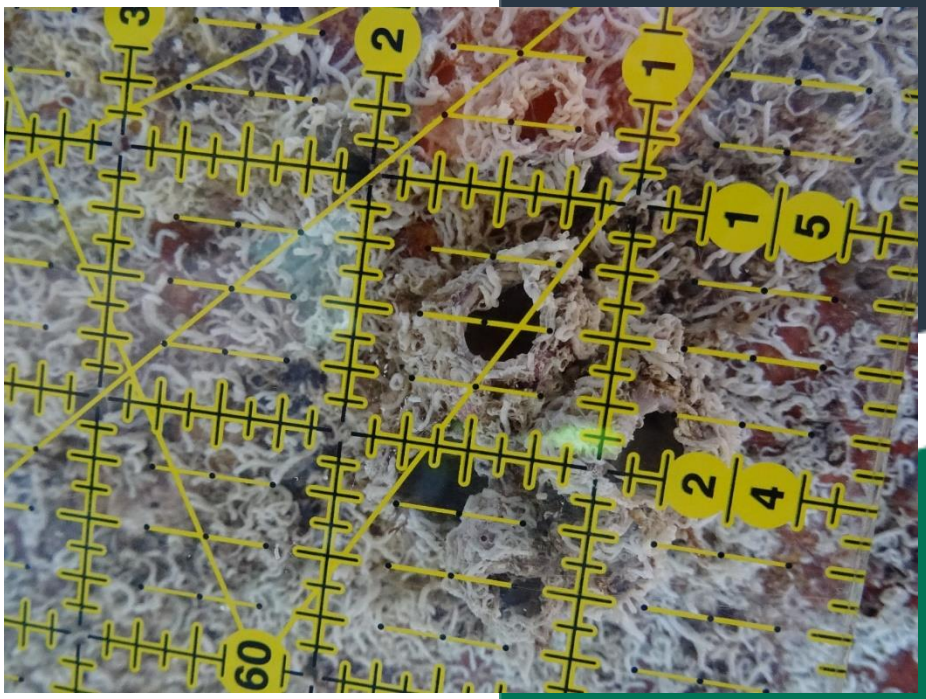
    a. The photographs should include scale and a label detailing the area of the hull pictured. Ideally, for scale a 20 by 20cm quadrat made out of pvc or metal pipe should be used. The diver should hold the quadrat against the fouling and ensure it is square to the camera for the photograph. The height of the fouling should also be measured with a ruler. Labels may be printed ahead of time if they can be waterproofed and carried by the divers, or written on an underwater whiteboard. For example, sb mid wl (for starboard midships waterline), sb mid hk (for starboard midships halfway to the keel), and sb mid k (for starboard midships keel). If possible a team of two divers, one to hold the quadrat and label, and one to take the photograph would produce better photographs.

    b. Ideally three separate quadrats should be sampled (all of the organisms within the quadrat should be removed for each sample) at each point on the hull discussed above. The diver should aim to get organisms off with a single scrape and deposit them in a plastic Ziploc bag pre-labelled with the location on the hull (see label abbreviations examples in **point 5a**). Care should be taken to keep the organisms intact and for hard bodied organisms to take both the shell and the organism inside the shell. If the sampling is widespread and the full hull needs to be sampled, then three samples each at the waterline, midway to the keel, and keel (3 depths) at the bow, midships, and stern (3 locations) on both sides of the vessel (2 sides) would translate to 3 x 3 x 3 x 2 = 54 samples total. If this number of samples is not practical then the number of samples at each point can be reduced to two (2 x 3 x 3 x 2 = 36), or even one (1 x 3 x 3 x 2 = 18), but this will prevent any later statistical analysis.

    c. Once back on the dive boat or onshore, each sample should be placed in its own leak-proof jar in a 70% ethanol solution. After four hours this solution should be completely removed (by draining the sample using a fine sieve) and replaced with fresh 70% ethanol to remove sea water diluting the preservative. If only a higher percentage ethanol is available and local staff are unsure of how to dilute it to 70% then more concentrated ethanol may be used to preserve samples for a short time, until the sample reaches the laboratory. When shipping samples ensure that they are described as "for laboratory identification". Depending on local regulations, samples may need to be left on the vessel until another port is reached.

6. Clear photographs of "typical" paint damage, if any, including the quadrat or a ruler for scale and a label detailing the area of the hull.

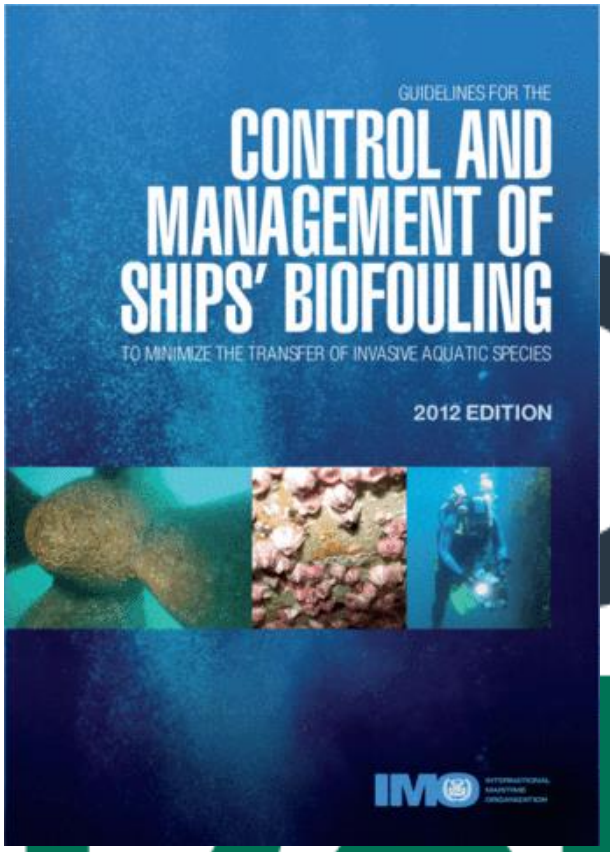
Inspection



Inspection

Management Advice

- Have an up to date and vessel specific Biofouling Management Plan and Record Book
- Make provisions for extended "stationary" periods
- Clean prior to departure or enroute
- New technologies
- Hard coatings plus hull grooming



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