

Lloyd's Register: Business unit

Lloyd's Register Group

Department of Environmental Conservation (DEC)
Cruise Ship Waste Water Science Advisory Panel 15 Presentation

Tio Devaney
Business Development Manager
Passenger Support Group
21st October 2010



LIFE MATTERS

Lloyd's Register North America, Inc.

Agenda

- Background Lloyd's Register
- Difference between Classification Approval and Statutory Approval
- Type Approval Process
- Questions



Learning Objectives

- Understand the differences between classification and statutory requirements
- Understand the type approval process and how a ship's classification would be affected by a through hull installation of new technologies or additional equipment.



Lloyd's Register North America, Inc.

Who we are

Lloyd's Register provides independent assurance to companies operating high-risk capital intensive assets in energy and transportation to enhance the safety of life, property and the environment, so helping our clients ensure safe, responsible and sustainable supply chains.

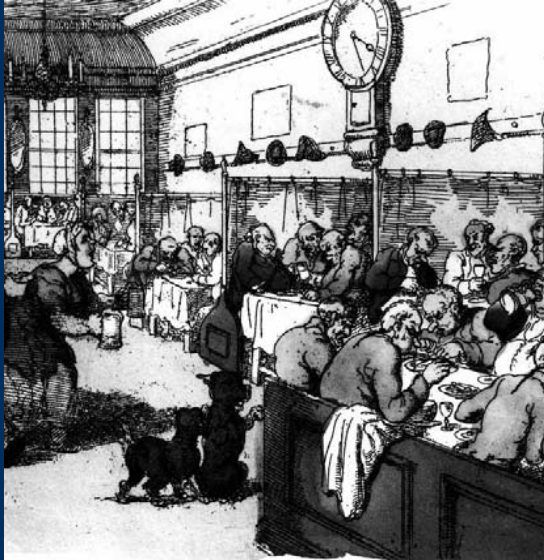
Lloyd's Register is an industrial and provident society with members, not shareholders. Profits are not distributed; they are used to develop the business towards its mission and for activities and causes that benefit society.

The Group comprises charities and non-charitable companies.



Lloyd's Register North America, Inc.

How we started



The Lloyd's Register Group owes its name and foundation to a 17th century London coffee house owned by Edward Lloyd, a meeting place of merchants, marine underwriters and others connected with shipping.

In 1760, customers of the coffee house formed the 'Register Society' to examine merchant ships and 'classify' them according to their condition. The first Register of Ships was printed in 1764.

The early 1900s saw the Lloyd's Register Group bringing its expertise to bear in other industries, particularly the energy sector. We also widened our services to include management systems certification.

250
YEARS
1688-2018

Lloyd's
Register

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The Group at a glance

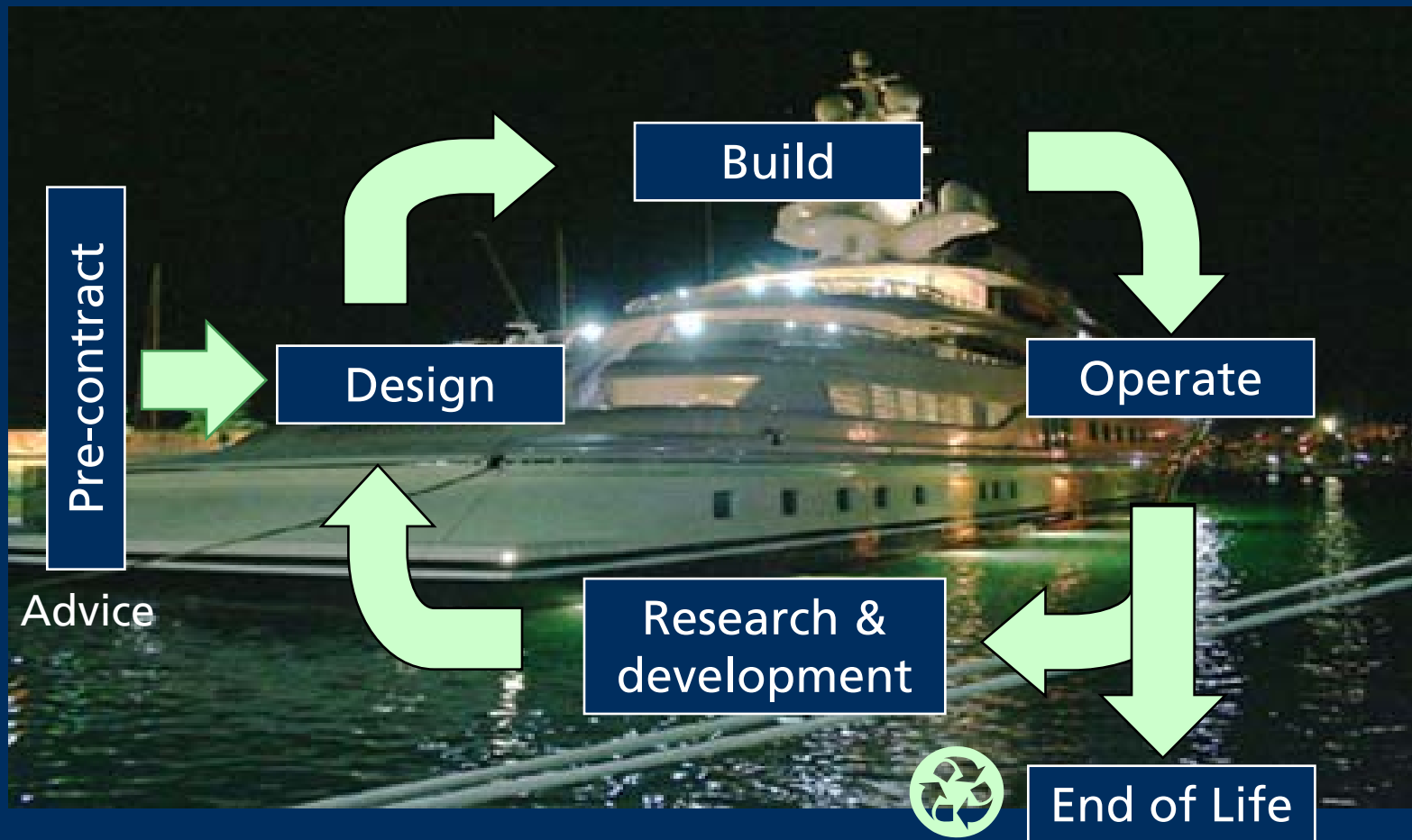
- Offices in 250 locations worldwide delivering services in 228 countries and territories
- 7,500 employees of 90 nationalities
- 101 companies
- Celebrating our 250 year anniversary this year
- Four business divisions:
 - Marine
 - Energy
 - Transportation
 - Management Systems (LRQA)



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What is Classification?

Life-Cycle Asset Service



250
YEARS
1825-2025

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How Do Vessels Enter Class?

Vessels entering class:

- ⇒ New Construction
- ⇒ Transfer of Class (TOC)
- ⇒ Reclassification
- ⇒ Acceptance into Class (AIC)

In all cases a satisfactory survey must be completed against class rules and/or statutory regulations



250
YEARS
1825-2025

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What is the difference between a Class Survey and a Statutory Survey?

- Class Survey – on behalf of a Society
- Statutory Survey – on behalf of a flag administration
- Classification requires valid Convention Certificates
- Statutory certification requires Classification



Classification and Statutory Surveys

Classification	Statutory Certification
<p>Structural strength of the hull</p> <p>Safety and reliability of propulsion and steering systems</p> <p>Effectiveness of essential auxiliary systems</p> <p>Fire Protection, detection and extinguishing (PASSENGER <36)</p> <p>Stability (as applicable)</p> <p style="text-align: center;">↓</p>	<p>Safety Construction</p> <p>Weather tight Integrity (Load Line)</p> <p>Pollution prevention arrangements</p> <p>Life saving appliances (safety equipment)</p> <p>Manning, Safety radio</p> <p>Fire Protection, detection and extinguishing</p> <p>Stability</p> <p style="text-align: center;">↓</p>

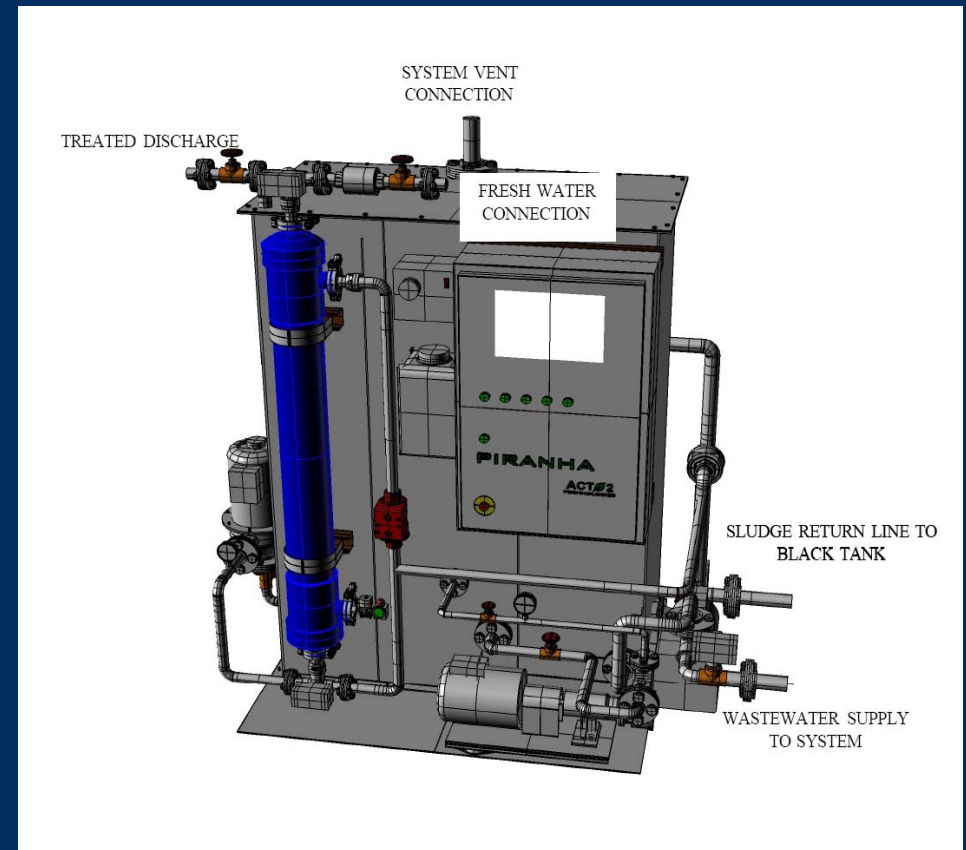
LR Rules

SOLAS, MARPOL, other International Conventions

Material and Products Approval

- Design review
- Type Testing
- Quality of Production

- Lloyd's Register Type Approval
- Statutory Approval (MCA) MEPC 159(55)
- Marine Equipment Directive (Wheelmark) Annex A1/2.6 Sewage Systems



Design Appraisal MPEC 159(55)



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Page	2 of 4
Document number	SAS P100022
Issue number	1

DESIGN APPRAISAL DOCUMENT

Date	17 August 2010	Quote this reference on all future communications	LDSO/TA/MARPOL/NS
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS P100022

The undemoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

The equipment has been examined and satisfactory tested in accordance with the International Maritime Organisation Resolution MEPC.159 (55) to meet the operational requirements referred to in regulation 9.1.1 of Annex IV of the International Convention for the Prevention of Pollution from Ships, 1973/1978.

The equipment was tested and produced an effluent which, on analysis, did not exceed:

100 thermotolerant faecal coliform per 100 millilitre MPN, and a geometric mean of total Suspended Solids of 35 milligrams per litre.

Designed hydraulic loading: 8.0 cubic metres per day
 Designed organic loading: 3.9 kilograms per day (BOD)

The control and sensor equipment were tested for shock and vibration.

The equipment has been designed:-

- i) so that the geometric mean of the 5-day Biochemical Oxygen Demand (BOD5) does not exceed 25 mg/l; and the Chemical Oxygen demand (COD) does not exceed 125 mg/l and,
- ii) can operate under conditions of heel of up to 22.5° and,
- iii) can operate with effluent values of 6.0 to 8.5 of the pH scale.



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TEST RESULTS

Test results and details of tests conducted on a specimen of Sewage Treatment Equipment in accordance with IMO Resolution MEPC.159 (55).

Sewage Treatment Equipment Type	WRS-6
Manufactured by	Act 2 Technologies, LLC
Organisation conducting the test	TEi - Testing Services
Test Location	TEi - TS Analytical Laboratory, Salt Lake City, UT, USA.
Designed hydraulic loading	6.0 cubic metres per day
Designed organic loading	2.9 kilograms per day BOD
Number of effluent samples tested	40
Raw sewage quality	Average 1138 milligrams per litre Suspended Solids
Maximum hydraulic loading	23 cubic metres per day
Minimum hydraulic loading	2 cubic metres per day
Average hydraulic loading	6.0 cubic metres per day
Geometric Mean of total Suspended Solids	7 milligrams per litre
Geometric Mean of the thermotolerant faecal coliform count	1 coliforms per 100 millilitres MPN
Geometric Mean of BOD ₅	3.2 milligrams per litre
Type of disinfectant used	No disinfectant is used
Was Equipment tested with Fresh Water flushing?	Yes
Salt Water flushing?	No
Fresh and Salt Water flushing?	No
Grey water added?	No
Environmental Conditions	
Temperature?	Yes 0 - 55°C
Humidity?	Yes 90%
Inclination?	Yes 22.5°
Vibration?	Yes As per MEPC.107 (49) (PART 3)
Reliability of Electrical and Electronic Equipment	Yes
Limitations and the conditions of operation imposed:	
Salinity	
Temperature	0°C - 55 °C
Humidity	90%
Inclination	22.5°
Vibration	As per MEPC.107 (49) (Part 3)



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LR Type Approval



CERTIFICATE OF TYPE APPROVAL


This is to certify that

Lloyd's Register did undertake the relevant type approval procedures of the equipment detailed below which was found to be in compliance with the essential Pollution Prevention requirements for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits, etc.

Manufacturer	Act2 Technologies
Address	3778 SW 30th Ave Fort Lauderdale Florida 33312 United States of America (USA)
Type	SEWAGE TREATMENT PLANTS (POLLUTION PREVENTION)
Product Description	"WRS-6"
Specified Standard	MEPC. 159(55)

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue	17 August 2010	Expiry date	16 August 2015
Certificate No.	SAS P100021	Signed	
Sheet No	1 of 4	Name	J. D. Morley Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

"Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract."



Lloyd's Register North America, Inc.

Building a better business



Working together to
improve safety and
to safeguard the
environment



Questions

