

U.S. Coast Guard Ballast Water Compliance



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Capital Link 8th Annual
Operating Excellence in
Shipping Forum

USCG Type Approved Systems

Manufacturer (Country)	Model	Independent Laboratory	System Type	Capacity
Optimarin (Norway)	OBS/OBS Ex	DNV GL	Filtration + Ultraviolet	167 – 3,000 m ³ /h
Alfa Laval (Sweden)	PureBallast 3	DNV GL	Filtration + Ultraviolet	150 – 3,000 m ³ /h
TeamTec OceanSaver AS (Norway)	OceanSaver MK II	DNV GL	Filtration + Electrodialysis	200 – 7,200 m ³ /h
Sunrui (China)	BalClor	DNV GL	Filtration + Electrolysis	50 – 8,500 m ³ /h
Ecochlor, Inc. (USA)	Ecochlor BWTS	DNV GL	Filtration + Chemical Injection	500 – 16,200 m ³ /h
ERMA FIRST (Greece)	Erma First FIT	Lloyd's Register	Filtration + Electrolysis	100 – 3,740 m ³ /h
Techcross, Inc. (Republic of Korea)	Electro-Cleen	Korean Register	Electrolysis	150 – 12,000 m ³ /h
Samsung Heavy Industries Co., Ltd (Republic of Korea)	Purimar	Korean Register	Filtration + Electrolysis	250 – 10,000 m ³ /h
BIO-UV Group (France)	BIO-SEA B	DNV GL	Filtration + Ultraviolet	55 – 1,400 m ³ /h
Wärtsilä Water Systems, Ltd.(UK)	Aquarius EC	DNV GL	Filtration + Electrolysis	250 – 4,000 m ³ /h

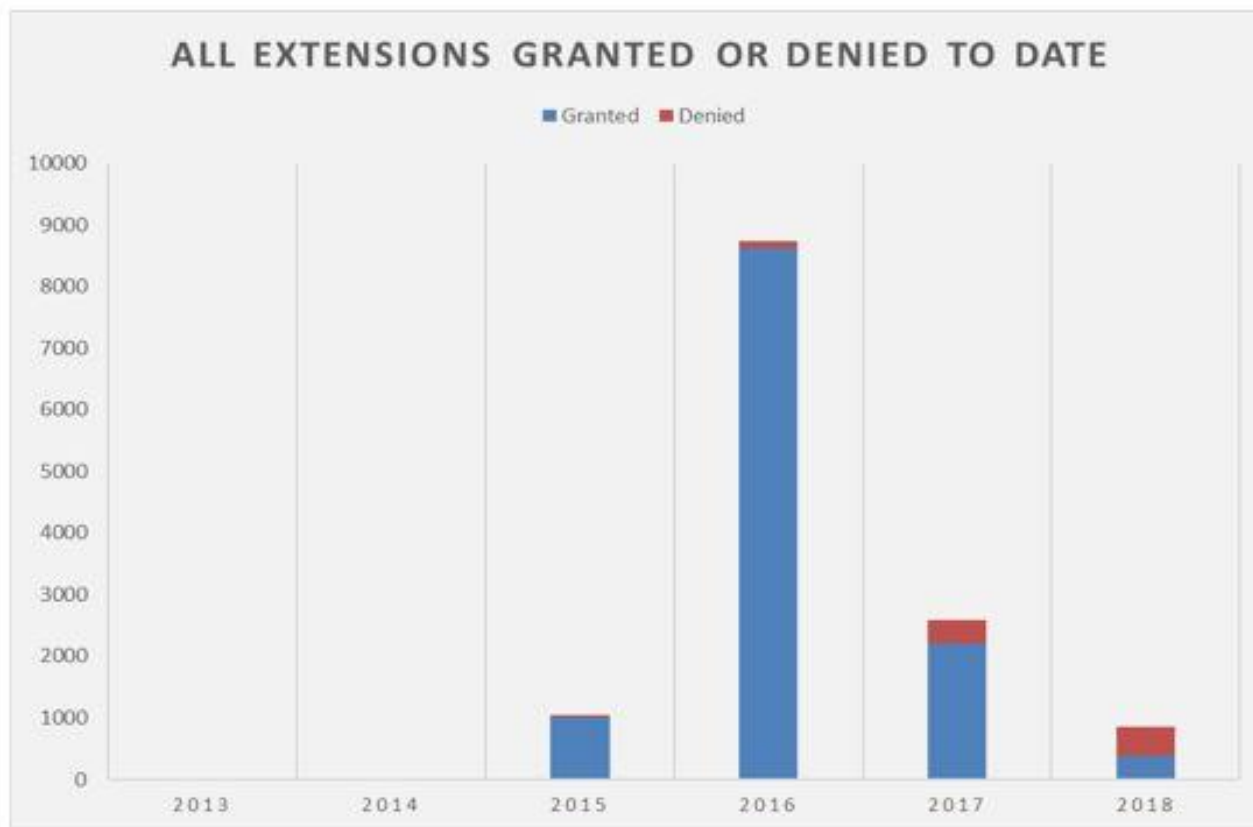
10 Systems Currently USCG Type-Approved

18 Systems under review

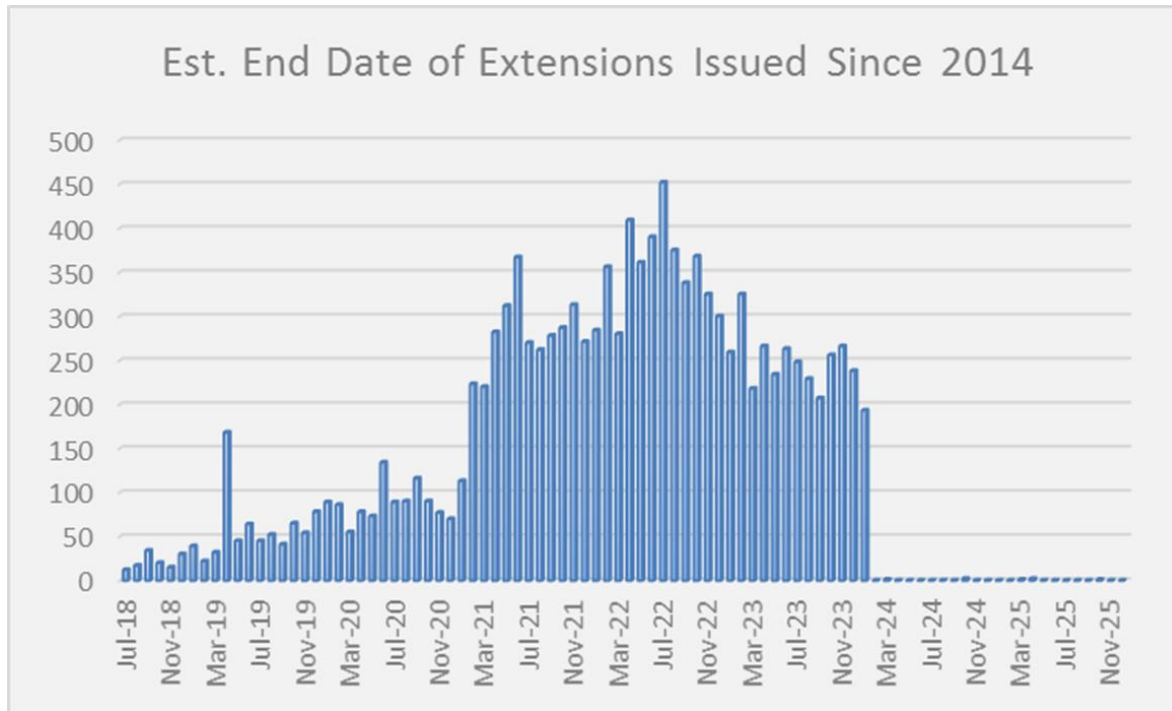
50+ Letters of Intent



Extensions



Future Compliance Issues Loom



- Drydock capacity could pose a challenge 2021 – 2023
- Manufacturer capacity could pose a challenge 2021 – 2023

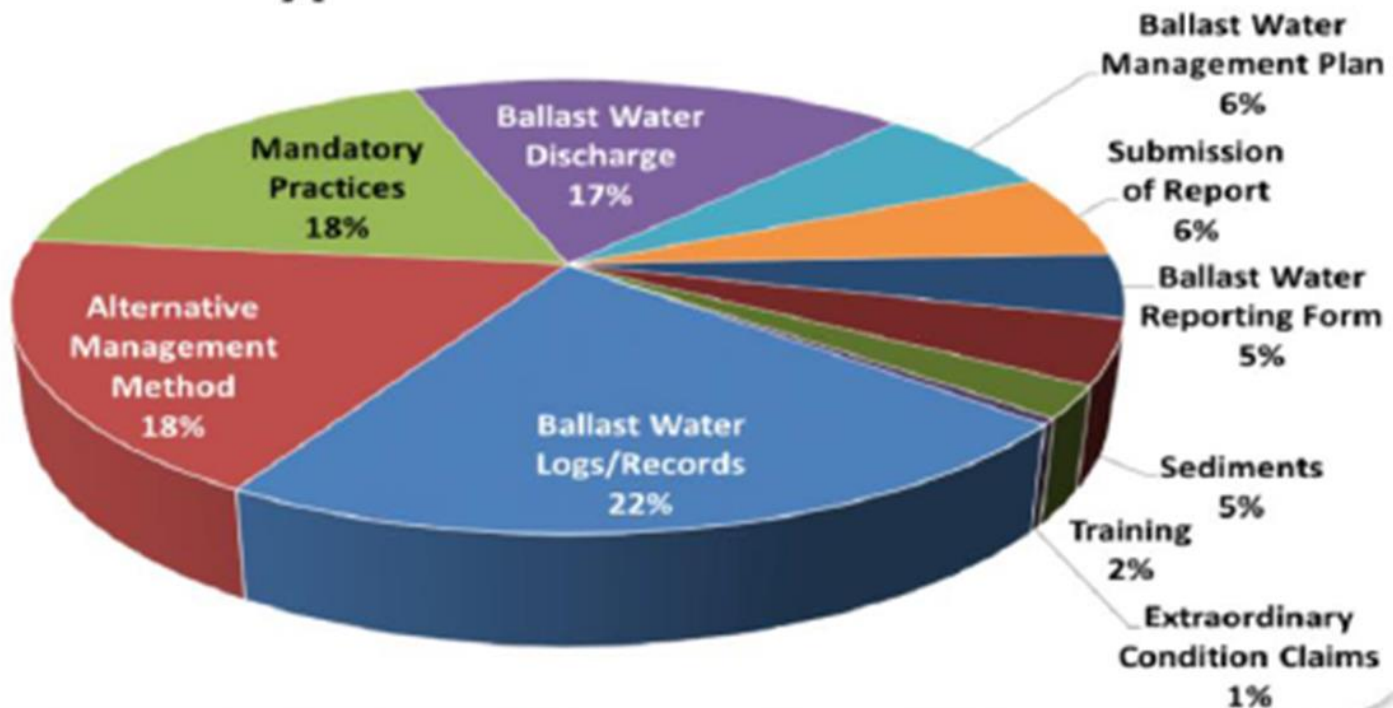
Result: Operators who have not embarked on choosing a system now, or determined a compliance strategy, may already be behind the curve.



Deficiency Trends

Ballast Water Management (BWM) Compliance in the United States

Types of BWM Deficiencies



Operational Limitations

Common Problems

1. Salinity too low for EC BWMS.
2. Turbidity too high for UV BWMS.
3. Temperature too low for BWMS.
4. Particulate too high for filtration.
5. Operator error/lack of maintenance.

Keys to Successful Operations

1. Match your system to your operations
2. Run your systems regularly, not just in the U.S.
3. Have a contingency plan for repairs and system malfunctions
4. Train crew on operating BWMS
5. Communicate issues early to the U.S. COTP, and propose a mitigation strategy!

There is no single magic solution, that is plug & play, and works at the flip of a switch.



Incentives

New Incentives For QUALSHIP 21/E-Zero Vessels

All Vessels

- **Special recognition** denoted on QUALSHIP 21 certificate
- **Vessel name** posted on U.S. Coast Guard website & EQUASIS

Tank Vessels

- **Vessel permitted** to conduct cargo operations within six months of both the COC annual examination due date and the COC expiration date. Tank vessels must still receive a full COC renewal examination prior to the issuance of the COC and the vessel's departure from the COTP zone.

Passenger Vessels

- **Reduced scope** for the environmental portion of the examination during COC periodic examinations.

Additional E-Zero Information:

<https://go.usa.gov/xPPdN>

Additional USCG BWM Information:

<https://go.usa.gov/xPPd5>

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