



TECHNICAL CIRCULAR No. 469 of 05<sup>th</sup> March 2018

---

|                     |                               |
|---------------------|-------------------------------|
| To:                 | All Surveyors/Auditors        |
| Applicable to flag: | All Flags                     |
|                     | <b>Lithium Battery Safety</b> |
| Reference:          | CONARINA Class                |

---

**Class and Regulators to Study Lithium Battery Safety**

DNV GL announced a joint partnership to study the safe use of lithium-ion batteries in shipping. The class society's partners in the effort include flag states, research institutions, battery and propulsion suppliers, fire system manufacturers, shipowners, vessel operators and yards. The scope is to identify improvements not just for the batteries themselves, but for the associated systems, procedures, and approval processes.

The cost of the present safety and approval methodology of such a system is cumbersome.

The project's deliverables are focused on safety. Tasks include the development of a safety model based on prior knowledge; a concerted lithium-ion battery risk assessment; a battery safety testing program; battery simulation and analysis tool development; and implementing the findings.

Including batteries in ships, whether as a hybrid or fully electric system, offers the industry the opportunity to improve fuel economy, reliability and operational costs. For this technology to fully take hold, however, knowledge and requirements must be in place to ensure that the products are safe.

Safety incidents have occurred in many applications of lithium-ion batteries, from cutting-edge aircraft to everyday laptops and smartphones, and they have occurred in the maritime realm as well. Battery fires affected the first two hybrid-powered tugs in the U.S., the *Carolyn Dorothy* and the *Campbell Foss*, and both vessels were ultimately rebuilt with new batteries and safety

*Customer Service Center*  
5201 Blue Lagoon Drive, 9<sup>TH</sup>. Floor,  
Miami, Fl., 33126  
Tel: 1 (305) 716 4116,  
Fax: 1 (305) 716 4117,  
E-Mail:

[joel@conarinagroup.com](mailto:joel@conarinagroup.com)

*Technical Head Office*  
7111 Dekadine Ct.  
Spring, Tx., 77379  
Tel: 1 (832) 451 0185,  
1 (713) 204 6380

E-Mail: [vbozenovici@vcmaritime.com](mailto:vbozenovici@vcmaritime.com)

systems. The U.S. Maritime Administration has published a comprehensive review of this retrofit project. The key safety changes to these two vessels included new, separate battery compartments; bulkhead-mounted rupture discs to safely vent these compartments in the event of an explosion; new air conditioning and air handling units; and new fire suppression systems.

REFERENCES:

- CONARINA Class -Electrical
- Energy storage system onboard a passenger ferry (DNV GL)

- ATTACHMENTS: No.

Kindest Regards,  
Val Bozenovici  
Naval Architect – Conarina Technical Director

*Customer Service Center  
5201 Blue Lagoon Drive, 9<sup>TH</sup>. Floor,  
Miami, Fl., 33126  
Tel: 1 (305) 716 4116,  
Fax: 1 (305) 716 4117,  
E-Mail:*

[joel@conarinagroup.com](mailto:joel@conarinagroup.com)

*Technical Head Office  
7111 Dekadine Ct.  
Spring, Tx., 77379  
Tel: 1 (832) 451 0185,  
1 (713) 204 6380*

*E-Mail: [vbozenovici@vcmaritime.com](mailto:vbozenovici@vcmaritime.com)*