

Tanker Shipping & Trade Conference & Awards

15-16 November 2016, London



COLTRACO Ultrasonics | since 1987

Technical Innovation Award Shortlisting: Portasteele® Calculator

**Speaker: Dr Carl Stephen Patrick Hunter BA(Dunelm) Hon DSc AssocRINA MRAeS FIMarEST
CEO & MD**

Coltraco Ultrasonics Limited

London, United Kingdom | csphunter@coltraco.co.uk | www.coltraco.com



The Problem

The Ungoverned Space of Gaseous Extinguishing Systems

- Industry tendency to see fire systems as a cost, not a means to safeguard valuable crew, cargo and vessel
- Dynamic systems are regularly treated as completely passive
- One would not install an alarm without a monitoring system to support it
- However, most fixed fire extinguishing systems are not monitored at all

Regulations - are not being enforced or conducted

- IMO SOLAS & FSS Code Chapter 2.1.1.3
“Means shall be provided for the crew to safely check the quantity of the fire extinguishing medium in the containers.”
- CO2 UK Marine Equipment Directive (MED) UK/EU legislation with US Coast Guard Mutual Recognition 7.3.2.6
- United States Coast Guard Marine Safety Alert – May 27, 2015
- NFPA Code 2001 7.11 & 7.13 and 12
- ISO 14520 Regulation Chapter 6 6.2.4.2 & Annex F 5



Fire Safety Risks

What Happens when the System Goes Wrong?

- Anecdotes:
 - Marine CO2 systems with 20% of the CO2 cylinders installed on commercial shipping being empty or partially filled
 - Cheap pressure gauges sticking in position under humidity or mechanical fatigue
 - Over-filled and under-filled cylinders
 - Bathroom weighing scales chained to the CO2 cylinders in an effort to comply with IMO SOLAS FSS Code regulations but no crew qualified to conduct such inspections
- Fire-related accidents (that have been reported):
 - November 2016 - Engine room fire onboard Maersk Patras
 - August 2011 - Accidental discharge of carbon dioxide on board SD Nimble resulting in serious injury to a shore-based service engineer at Her Majesty's Naval Base Faslane (MAIB,2011).
 - May 2010 - Marsol Pride, uncontrolled release of fire-extinguishing gas into engine room, Tui oil and gas field (TAIC, 2011).



How Portasteele® Works

Step 1

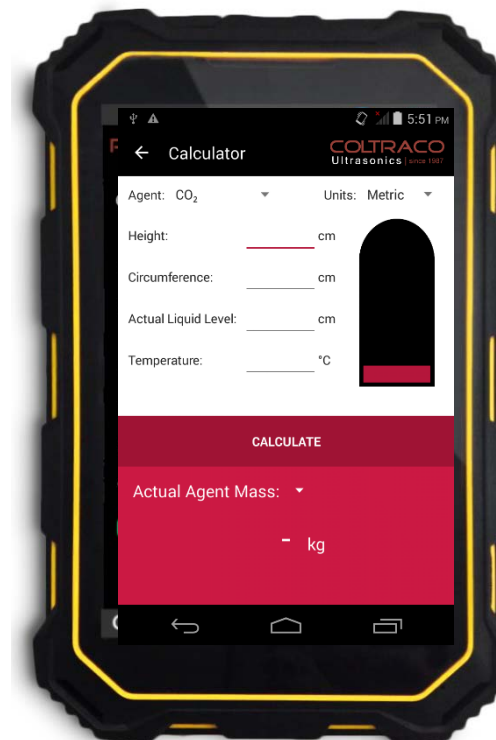
- Use Portalevel® handheld ultrasonic liquid level indicator
- To find the liquid level in a cylinder of CO₂, FM-200® or Novec™ 1230

Step 2

- Use Portasteele® Calculator tablet based app to convert the level height into the weight/mass of extinguishing agent
- Popular cylinder types saved to easy-to-find settings list
- Record and download results for added value servicing

Innovation & Technology of the Future

- Ease of use, portability, rugged casing, accuracy and reporting capabilities provides an unparalleled solution
- Future monitoring aspirations: Contents-Weight-Pressure



Safeship[®] Solutions: Core Capabilities



A. Watertight & Room Integrity

Hatch Covers, MCTs, WT Doors
Portascanner[™] Watertight



Continuous 10-Day Monitoring Add-On
Permascanner[™] HI-Life Generator



Room Integrity Leak Detection
Portascanner[™] ISO 14520



Continuous Monitoring Solution
Permascanner[™] Dynamic

Semi-Fixed Monitoring Solutions
Portascanner[™] MCT
Portascanner[™] WT Door
Portascanner[™] CO2 Room

B. Fire Suppression Systems

Liquid Level Indicators
Portalevel[™] MAX Marine



Portamarine[™]



Continuous Monitoring Solution
Permalevel[™] Multiplex



Convert Liquid Level to Weight
Portasteel[™]



C. Pipework Integrity

Pipework Integrity Inspection
Portapipe[™]



Pipework and Hull Plate Corrosion
Testing with Thickness Gauges

Portagauge[™] 3 Portagauge[™] 4



D. Flow rate and Bearing Monitoring

Flow Rate Testing
Portasonic[™]



Monitoring Rotating Machinery
Portamonitor[™]

