# BUNKERSPOT

## STRESS TEST

### 2020: CAN REFINERS MEET THE SULPHUR DEADLINE?
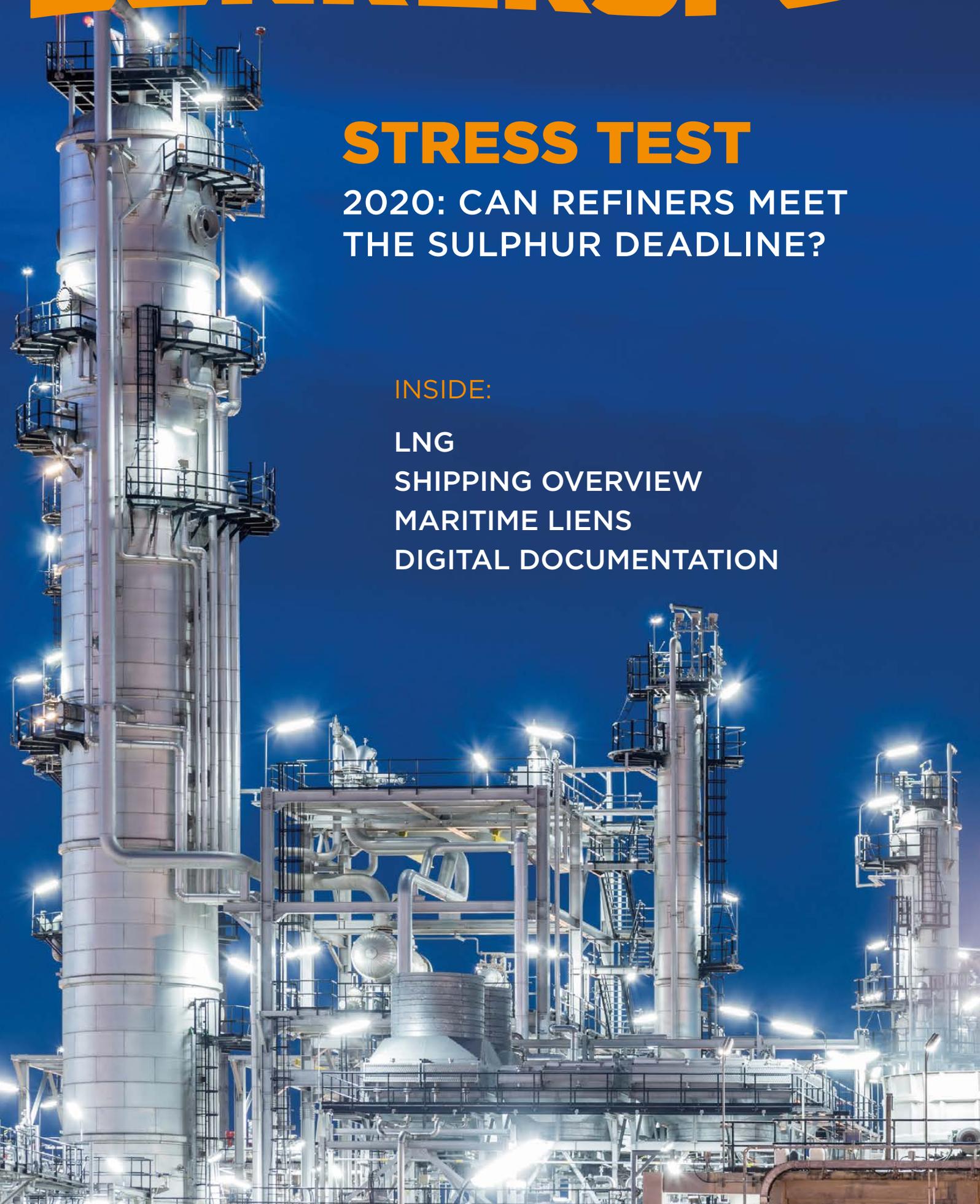
INSIDE:

**LNG**
**SHIPPING OVERVIEW**
**MARITIME LIENS**
**DIGITAL DOCUMENTATION**

# Future proof

As the use of cutting edge technology increasingly becomes the 'norm' for business transactions, the bunker industry remains stubbornly attached to cumbersome and time-consuming paper-based documentation processes. Jeff Mildner of Vortex Development Group explains how the company is working to bring the paperwork and commercial exchanges associated with marine fuel deliveries and safety checklists into the digital world

Digital Bunker from Vortex Development Group is a tablet-based forms solution that provides instantaneous delivery of PDF files to multiple stakeholders simultaneously and tracks responses in a series of databases for analytics. It was unveiled to local physical suppliers at the International Bunker Industry Association's (IBIA) Annual Convention in Gibraltar in November.

Vortex brings together a wealth of bunkering and software expertise. Co-founders Jeff Mildner and Marc Gawthrop are focused on liberating the bunker industry from the paper chase with E-Ship Safety and E-BDN, just two of the many forms contained within the Digital Bunker app.

Long overdue in an industry often slow to change course, Digital Bunker represents a glimpse into what we believe will be the new paradigm, just as Google has replaced the encyclopedia, the dictionary and the reference manual.

Vortex is tasked with taking delivery documentation from a batch-processing scenario of hand-completed paperwork with a pen to real-time reporting via tablet. Digital Bunker is a functionally elegant solution to the 100-year old problem of documenting safety checklists and fuel delivery transactions. It will be a major shift for the industry, but we are confident this application has the capability to do just that, and in the process, establish a worldwide standard.
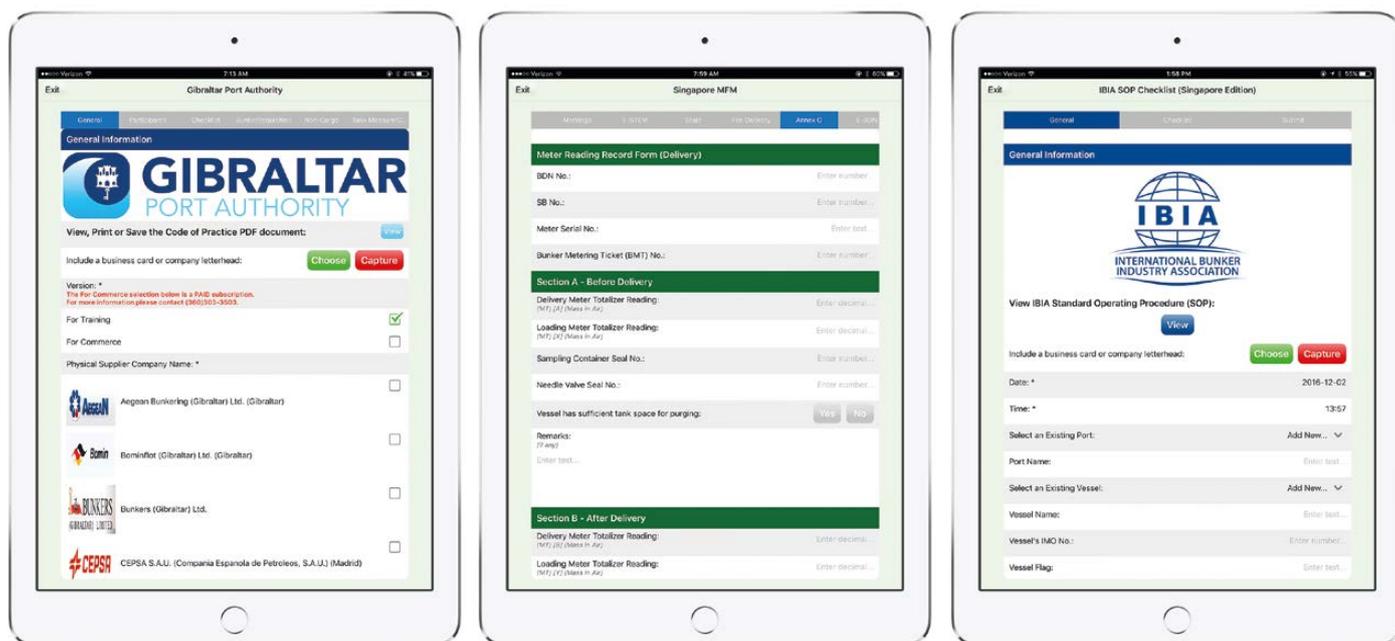
As a newcomer to the industry, it was surprising to learn that the administration of paperwork in bunkering has not evolved and kept pace with the rest of our current digital experience. It seems that nearly everyone has a cell phone with incredible processing power yet somehow the marine fuelling sector has been unable to replace the technology of an ink stamp on paper (so last century) for such an important function, the bunker delivery note (BDN). Fixing this problem was the starting point for Vortex. Our mission was simple: make a form that captures a wide array of information and sends you an email with that content, storing it all in a database. Accomplishing that seemingly straightforward task proved to be something quite complex and is now contained in our app.

A version of Digital Bunker has been in development and use at Arbutus Point Marine (Marc's company) in the Vancouver, British Columbia, area for the last two years. We have shown that it is possible to get an invoice on a buyer's desk within two minutes of a chief engineer's signature on an Electronic Bunker Delivery Note, hence the name E-BDN.

E-Ship Safety is an electronic International Safety Guide for Oil Tankers and Terminals (ISGOTT)-compliant, pre-bunkering checklist for use in ports around the world. E-Ship Safety captures global positioning system (GPS)-tagged ship stamp photos, signatures and answers to 23 ISGOTT delivery safety questions, sending PDF files to multiple recipients simultaneously. E-Ship Safety makes this common basic pre-delivery function electronic for the very first time.

Now available at no charge on Apple's App Store, Digital Bunker's first template is E-Ship Safety. It allows vessels, physical suppliers, surveyors, port authorities and customers to receive PDFs and real-time data from the ship's rail using an iPad or iPhone (Android coming soon). We welcome feedback and

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'In addition to conventional deliveries made by truck, barge, tanker or ex-pipe, Digital Bunker for MFMs is 100% compliant with the requirements of TR 48 from a paperwork standpoint'

constructive criticism on how to improve the software and include new features. Download Digital Bunker from the App Store and let us know what you think. (After downloading, select the 'Let's Go' button; the email and password login is for customised solutions. )

Given today's 24/7 global appetite for information, goods and services, you can't help but wonder why paperwork and volumetric calculation has not changed much from the days of coal's transit to oil as a source of marine propulsion.

Every day we move trillions of bits of data all over the world at light-speed, receiving all types of information in our smartphones and tablets. Through the continually updated versions of new technology that we're all immersed in, we get ever-faster computers in our pockets, homes and offices.

Still today, the practice of placing a stamp on a piece of paper remains the metric by which a deal is authenticated for goods or services – the humble bunker delivery note is no exception – until now. As a newcomer to the industry, I was surprised to learn that people still carry out calculations based on paper tables and formulae dated from 1980. One day in the not-too-distant future, mass flow meters (MFMs) will be ubiquitous and traditional paper-based calculations will be the exception in an increasingly connected and digital world. Digital Bunker is the bridge between those

two realities and serves both with the same ease of use and familiar app-based interface.

E-BDN, scheduled to be released in early 2017, incorporates automatic API 2004 volumetric and density calculations (from °API and Temperature value inputs) replacing 1980 API Tables 6B and 54B for a more accurate determination of delivered quantity.

As seen in a recent trip to Copenhagen, even the rental bicycles are sport-

ing tablets! The bunker industry should be able to meet or exceed the technical standard of a rental bicycle fleet.

The bikes have batteries behind the seat, GPS-enabled tablets with maps for rental information.

We are now working with the Gibraltar Port Authority (GPA) to begin field-testing Digital Bunker. We will be demonstrating the increased efficiency, reporting capabilities



Copenhagen, row of rental bikes in charging station with tablets.

'We are also working with the Society for Gas as a Marine Fuel (SGMF) on an E-BDN for LNG that has information passed to it from the required pre-bunkering E-Ship Safety form and we will integrate these forms into Digital Bunker, making them available world-wide'

and utility against traditional paper-based bunker delivery notes. The GPA is looking towards the future with our initiative and we will be working together with the physical supplier community to customise Digital Bunker in Gibraltar for each of them. Based on its ease of use, seamless integration with existing systems and similarity from one port jurisdiction to another we believe adoption will be swift in the industry. The forms in Digital Bunker for E-Ship Safety and E-BDN are variations on a theme; reporting ISGOTT and MARPOL mandated fields while outputting PDF files that look exactly like customers' own traditional paper forms.

Based on the GPA's Code of Practice, the Gibraltar edition of Digital Bunker is a questionnaire, image and signature capture tool that includes many data fields for reporting. In addition to emailing a multi-page PDF file to all stakeholders, all question responses are tracked for customised data mining by each participating company and the port.

Customising the app for other port authorities is the product plan in our development process – we have the framework down and the software is very robust.

In addition to conventional deliveries made by truck, barge, tanker or ex-pipe, Digital Bunker for MFMs is 100% compliant with the requirements of TR 48 from a paper-work standpoint. Vortex has a reproduction licence from SPRING Singapore for the forms contained in TR 48 and Digital Bunker emails a 20-page PDF after clicking 'Submit' in the app.

We are also working with the Society for Gas as a Marine Fuel (SGMF) on an E-BDN for liquefied natural gas (LNG) that has information passed to it from the required pre-bunkering E-Ship Safety form and we will integrate these forms into Digital Bunker, making them available world wide.

As an exercise, we have converted IBIA's Standard Operating Procedure for Surveyors (Singapore edition) and turned this 19-page PDF into an app with a checklist, signature boxes and GPS-tagged ship stamp capture. We hope to be able to release port-specific versions of this SOP in the near future.

The adoption of a digital solution for the industry rests with each port authority and their willingness to sponsor and embrace a system. It is clear that the future of bunkering will transition to the digital arena, as all things shipping are heading into the world of big data. The capture of so many points of information simply can't be done by the traditional method of entering data into a computer back at the office after a delivery was conducted with a pen on paper. There's just no comparison to the level of speed and comprehensive reporting that can be done with tablets running customised software.

The main shortcoming to any digital solution is the issue of connectivity. Without a cellular or satellite connection, no software can be considered suitable as a bunker delivery tool. As technology races forward, the connectivity issue will become less and less important for all but the most remote locations. Even today, a solution exists to overcome this shortcoming – a data-only satellite system positioned on the bunker tanker, ensuring worldwide connectivity.

A key aspect of the Vortex approach is that we provide the requisite hardware for our software to run on. As a means of removing the barrier to entry for companies to participate in field tests and to help encourage early adoption, we will provide two iPads and a battery-powered wifi printer as part of the 'kit' to go onboard each bunker tanker. Without the right hardware, the chance for adoption, and ultimately success is low.

As part of the subscription to their App-as-a-Service, Vortex will also be underwriting the cellular contracts for each iPad and will facilitate the purchase, delivery and installation of satellite systems (when required) for anchorages with poor cell service, thus guaranteeing connectivity from each tanker using its system.

Combining fuel consumption knowledge and fuel delivery history is the next step in compliance with the recently announced International Maritime Organization (IMO) Mandatory Fuel Consumption Data Collection System requirement for all ships beginning in 2019. Vortex is developing a module for this independently and we will offer it free of charge to the global shipping community by late 2017.

Establishing a software solution for consumption reporting and working through the issues before 2019 gives us plenty of time to fine-tune a system that integrates with other aspects of Digital Bunker. We welcome the opportunity to work with relevant partners as our services evolve.

We are in the early stages of working with the folks at Genscape VesselTracker to integrate their database of ship details and global ship position information into Digital Bunker. Predictive modeling for bunkering using information from both the E-BDN and Genscape's Bunker Periscope predictive model is the logical conclusion and natural synergy from partnering with the company.

We are also pleased to announce that Scott Wolfe has joined the team to help with our technology initiative. Scott is a long time software veteran whose background is working with Fortune 500 and Global 2000 multinational organisations.

Vortex will also be in Dubai at Petrospot's *Middle East Bunkering Convention* (23-26 January, 2017), participating in the MFM workshop.

It is our goal as a company to assist with the transition to a digital future in bunkering and tailor solutions to an industry in need of a paradigm shift for the sake of efficiency, accuracy and security.

Digital Bunker is the App-as-an-Engine that powers multiple forms.

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Jeff Mildner
Tel:    +1 360 303 3503
Marc Gawthrop
Tel:    +1 604 341 8048
Web:
www. vortexdevelopmentgroup.com
www.digitalbunker.com