

The Houston 'bad bunkers' problem in 2018 caused operational problems onboard hundreds of vessels. Whilst the root cause of the fuel contamination still remains unknown, the current view is that the culprit in the bunker 'brew' was probably a cutter stock or blend stock introduced into the supply chain. Under maritime law, vessel owners and operators would seem to have limited opportunity to lodge quality or damages claims against suppliers and traders. However, as **Steve Simms** of Simms Showers explains, US state law may, in some cases, offer the possibility of recourse

Double, double toil and trouble;
Fire burn and caldron bubble.
Fillet of a fenny snake,
In the caldron boil and bake;
Eye of newt and toe of frog,
Wool of bat and tongue of dog,
Adder's fork
and blind-worm's sting,
Lizard's leg and howlet's wing,

Double, double toil and trouble; Fire burn and caldron bubble. Cool it with a baboon's blood, Then the charm is firm and good.

Like a hell-broth boil and bubble.

William Shakespeare, Macbeth: IV.i 10-19; 35-38 Present expectation is that residual blends will meet much of the world's 2020 0.50% sulphur limit bunker demand¹. Pure distillates will continue to be relatively expensive compared to blends. That gap will widen as there becomes less demand for high sulphur residual fuel, which after 2020 only exhaust gas cleaning system (scrubber')-equipped vessels may consume.

Achieving a blend to meet the 0.50% limit requires the blending of high sulphur residual fuel with blend stocks and cutter stocks. Blend stocks are any unfinished oil blended with the residual. Cutter stocks can be anything that reduces the blend's viscosity (basically, thickness). Common cutter stocks are light cycle oil (LCO) and kerosene but they are relatively expensive, so to offer a lower-priced product (or to make more profit), fuel blenders might attempt to use less LCO and kerosene or substitute other cutter stocks.

What if any liability is there for suppliers of blend stock or cutter stock – or for those who deliver faulty blends – to those damaged by non-compliant blends?

Just like the Macbeth witches' brew, 2018's Houston-sourced, blended fuel quality problems were

powerful trouble for the many suppliers, traders, charterers and owners they affected.

The Houston problem seems to have been with those selling the cutter stock and those buying it to make the blends. Thus far, neither those who did the blending or provided the cutter stock have (at least publicly) faced liability – even though they caused the problem (and the traders and suppliers selling the blends directly to traders probably did not).

This article presents that applying some US states' law (notably, Texas and California), cutter stock and blend stock suppliers and blenders may be held liable to vessel owners, charterers, traders and upstream suppliers (who have no contract with the stock suppliers or blenders) for the damages that their off-spec or otherwise non-compliant stock or blends cause.

This liability extends to those blending even with otherwise acceptable blend- and cutter stock, whose 'recipes' make non-compliant or off-spec blends. The liability can be in tort (products liability) or warranty, independent of direct contract, and provides for damages for pure economic loss at least where there has been vessel machinery damage, where United States maritime law would not.

Image @ Shuttersto



The problem Houston blends utilised cutter stock which was the petrochemical equivalent of the witches' snakes, frogs, and lizards' legs. Its source was the waste streams of some of Houston's many petrochemical plants. 4–Cumyl–Phenol, an acid for making sticky epoxy resins, pesticides and lubricants, was an acid found in much of the non-compliant, off-spec blends, along with other acids from waste biodiesel and tall oil. The brew also included nitrogenous compounds from polymer production, benzoic acid, cyclohexane diol isomers and dehydroabietic acid and other oxygenated compounds.

The problematic Houston cutter stock likely was low cost – if not free – given the alternative to the plants that had otherwise to pay to dispose of it. Putting it into the blended bunker production stream met two needs: for the plants to dispose of their waste cheaply and for the blenders to have cheap cutter stock.

Many of the vessels taking on the problem blended fuel didn't begin to burn it until weeks later. Their owners and charterers sailed out of the Houston emission control area (and Panama and Singapore), and, once out, switching (and often only after burning earlier loaded fuel) to the newly-loaded blend because the fuel tested just fine under standard ISO 8217 tests – it would not cause problems. The fuel had tested compliantly with the second part of ISO 8217:2017 Clause 5.1 using the then-standard ISO 8217 tests, 'conform[ing] to the characteristics and limits given in Table 1 or Table 2, as appropriate, when tested in accordance with the methods specified.'

But, the Houston-brewed fuel did cause problems. Once finally burned it quickly became clear that the blended fuel was non-compliant with ISO 8217:2017 (and earlier versions) Clause 5.2: 5.2. The fuel shall be free from any material at a concentration that causes the fuel to be unacceptable for use in accordance with Clause 1 (i.e. material not at a concentration that is harmful to personnel, jeopardises the safety of the ship, or adversely affects the performance of the machinery).

It also wasn't 'homogeneous' under ISO 8217:2017 Clause 5.1 and was non-compliant with MARPOL VI Regulation 18 ('Fuel Oil Availability and Quality') (and thus the bunker delivery notes (BDNs) signed confirming MARPOL VI compliance also were false):

- Fuel oil for combustion purposes delivered to and used onboard ships to which this Annex applies shall meet the following requirements:
- .2. fuel oil for combustion purposes derived

by methods other than petroleum refining shall not:

* * *

.2.4.1. jeopardise the safety of ships or adversely affect the performance of the machinery ...

Damage to many vessels included blocking and excessive wear of fuel separators, fuel filters, injection pumps and fuel injectors, engine piston rings and pistons and cylinder liners. Most owners and charterers discovered the damage once they were far from the place of supply. The Houston-sourced, problem fuel also had been carried to Panama and then to Singapore, perhaps re-sold several times and also damaging vessels loaded with it there.

Bunker traders, suppliers, and charterers or owners many weeks after loading the fuel had to make or receive quality and later damages claims for the problem blends. By that time, however, many contractual time bars had run. So, time-barred charterers and owners had no contractual claims against traders. Time-barred traders had no claims against suppliers. Or, if a trader's customer had made the claim timely against the trader, then the trader often was time-barred by its supplier's contractual provisions. Charterers were left with no apparent recourse although still liable to owners under their charter parties, having allowed the loading of non-compliant fuel that damaged the owners' vessels.

US maritime law applied to most of the Houston provisions, and many of the Panama and Singapore provisions also were subject to sales terms incorporating US maritime law - which is common to many traders' and physical suppliers' terms worldwide. The fuel supply contracts were all maritime contracts. and under US maritime law, there is no tort (products liability) or third party (indirect) warranty claim recovery for purely economic loss (which includes damage to vessel machinery)2. So, time-barred under their direct contracts, charterers or owners which had bought the fuel had only economic loss and therefore no third party claims against the suppliers selling the non-compliant, blended fuel either3. Suppliers often had bought from other marine suppliers, and were subject to similar contractual and economic loss time bars.

But, the question remained: who really caused the damages? It, of course, was the entities which had supplied the non-conforming cutter stocks (it was probably more than one entity given the multiple streams) and the entity (given the common problems, it probably was one or at least a limited number of entities) which had utilised the cutter stocks in blending.

The critical fact here from a US legal standpoint is that the supply of the cutter

stock and its blending had most likely, in the Houston situation, taken place ashore. That is, although blending can be done on barges, and rarely (and not advisably) on vessels, the Houston blending was probably done in tanks ashore in Houston.

US maritime law does not apply to this blending ashore. There accordingly was no maritime contract or maritime tort causing the damage involved.

Under US law (including US. maritime law), [a] contract is not considered maritime merely because the services to be performed under the contract have reference to a ship or to its business, a ship is the object of such services, or it has reference to navigable waters. To be considered maritime, there must be a direct and substantial link between the contract and the operation of the ship, its navigation, or its management afloat, taking into account the needs of the shipping industry, for the very basis of the constitutional grant of admiralty jurisdiction was to ensure a national uniformity of approach to world shipping.

1 Benedict on Admiralty § 182, quoted in *Lightering LLC v. Teichman Group*, 328 F. Supp. 3d 625, 637 (S.D. Tex. (Houston) 2018). Consequently, in a recent United States Court of Appeals case (in the Appeals Court covering the area including Houston, the 5th Circuit), the Court wrote as follows:

Based on the principles laid out in [Norfolk Southern Railway Co. v. Kirby, 543 US 14] we adopt the following two-pronged test to determine whether a contract in this context is maritime: First, is the contract one to provide services to facilitate the drilling or production of oil and gas on navigable waters?... Second, if the answer to the above question is 'yes', does the contract provide or do the parties expect that a vessel will play a substantial role in the completion of the contract? If so, the contract is maritime in nature.

* * *

This test places the focus on the contract and the expectations of the parties. This is the proper approach in a contract case and assists the parties in evaluating their risks, particularly their liability under indemnification clauses in the contract. This test also removes from the calculus those prongs... that are irrelevant, such as whether the service work itself is inherently maritime and whether the injury occurred following a maritime tort. Courts need not determine whether this service work has a more or less salty flavor than other service work when neither type is inherently salty.

Larry Doiron, Inc. v. Specialty Rental

Tools & Supply, L.L.P. (In re Larry Doiron, Inc.), 879 F.3d 568, 575-577 (5th Cir.), cert. denied ___US ___, 138 S. Ct. 2033 (2018). The court concluded as follows that the contract involved was not a maritime contract: Applying this new test to this case, the oral work order called for STS to perform downhole work on a gas well that had access only from a platform. After the STS crew began work down hole, the crew encountered an unexpected problem that required a vessel and a crane to lift equipment needed to resolve this problem. The use of the vessel to lift the equipment was an insubstantial part of the job and not work the parties expected to be performed. Therefore, the contract is non-maritime and controlled by I ouisiana law...

Id. at 577.

The court in *Barrios v. Centaur, LLC*, 345 F. Supp. 3d 742, 748 (E.D. La. 2018) reached a similar conclusion. The contract involved was to lay concrete, entirely on land, for a dock. The court wrote as follows:

The Supreme Court instructs that the Court should consider whether the 'principal objective' of a contract is maritime commerce. Here, the primary objective of the UBT/Centaur MSA is the construction of a concrete lip on UBT's dock. Like in Lightering, this objective merely facilitates the traditional maritime commerce activity of loading and unloading vessels. This Court holds that the land-based construction contract at issue here is non-maritime.

The supply of the Houston cutter stock which caused the damage, and the blending using the cutter stock which caused the damage, took place on land. Under the courts' reasoning just presented, there was no maritime contract, or tort, involved. When there is no maritime tort or contract involved, US maritime law (and restriction on products liability in tort, because of only economic loss) does not apply. Instead, states' laws, with generally a different set of rules providing for liability to third parties even though there is economic loss, may apply.

The United States has two general streams of law. First is statute, enacted by either the United States Congress (for federal laws, applying throughout the country) or individual legislatures of the fifty (50) states (state statutory law, applying in that individual state). Second is court opinion. The United States has, inherited from England and common to many Commonwealth countries, a common laws system. The development of the law comes from court decisions which build upon each successive decision, and also interpret statutes. Then, the court opinions divide in

two directions: federal, and state decisions which apply to non-maritime subjects, and those which address maritime subjects.

The central principle to United States' maritime decisions, whether from federal or state courts, is that to promote maritime commerce uniformly, maritime law decisions must be uniform throughout the country. So, a federal or state court in one state should consider a maritime decision of another state's federal or state court as precedential. A state court considering a non-maritime matter (or a federal court considering a state law maritime matter) must follow the decisions of its own state courts and not by those of another state.

Many, but far from all, US states apply the same 'economic loss doctrine' that United States maritime law does. Texas law does not. Where there is physical property damage, '[a] party states a tort claim when the duty allegedly breached is independent of the contractual undertaking and the harm suffered is not merely the economic loss of a contractual benefit.'

In Texas and other states, third party owners, charterers, traders and suppliers may also have rights to sue blenders or stock providers for breach of warranty under the Uniform Commercial Code (UCC) § 2-318 ('Third Party Beneficiaries of Warranties Express or Implied'). The UCC is a set of suggested state laws, developed to apply to sales of goods in the United States and enacted in different versions in each state. Blended bunkers are a 'good', as are their components. UCC § 2-318 is unusual in that it has three alternative versions, the first two of which limit to natural persons any recovery for breach of express or implied warranties. Its third version ('Alternative C'), however, provides as follows:

A seller's warranty whether express or implied extends to any person who may reasonably be expected to use, consume or be affected by the goods and who is injured by breach of the warranty. A seller may not exclude or limit the operation of this section with respect to injury to the person of an individual to whom the warranty extends.

'If the patented fuel does not operate 'as advertised' or the blend is not done following the patented process (which does), then again, the blender, whose blending requires highly specialised expertise, might be held liable in warranty (under those states' law permitting that)'

Chapman Custom Homes, Inc. v. Dallas Plumbing Co., 445 S.W.3d 716, 718 (Tex. 2014). California has an approach similar to Texas': there may be third party, products liability recovery against the maker or provider of a defective product where the defect leads to damage to property other than the defective product itself. Jimenez v. Superior Court, 59 P.3d 450 (Cal. 2002).

The 'economic loss doctrine' is one of the principles of US tort law most varied across US states. At least in Texas and California and other US states⁴, however, bunker blenders and stock providers may be sued by third party owners or charterers, traders or suppliers, where the blends or stocks damage vessels' machinery, or cause the vessels to do damage because of blended fuel failure. The suits may also be in a period longer than the very short contractual limitations for claims against direct contractual parties: for property damage in California suing in negligence, two years, Texas, three years (and other states' statute of limitation periods vary)⁵.

Under this 'Alternative C', a 'person' includes a corporation (e.g., shipowner, charterer, bunker trader, upstream physical bunker supplier) and in many states (including Texas) economic injury. The Texas version of UCC § 2-318 goes further: Sec. 2.318. CHAPTER NEUTRAL ON QUESTION OF THIRD PARTY BENEFICIARIES OF WARRANTIES OF QUALITY AND ON NEED FOR PRIVITY OF CONTRACT. This chapter does not provide whether anyone other than a buyer may take advantage of an express or implied warranty of quality made to the buyer or whether the buyer or anyone entitled to take advantage of a warranty made to the buyer may sue a third party other than the immediate seller for deficiencies in the quality of the goods. These matters are left to the courts for their determination.

The court in Berge Helene Ltd. v. GE Oil & Gas. Inc., 830 F. Supp. 2d 235, 244 (S.D.TX 2011) explains as follows: The Texas Supreme Court in Nobility 'With this, in most all US states, is the rule that those claiming damages must do what they can to minimise ('mitigate') their own damages. So, for example, a vessel owner discovering off-spec fuel may not proceed to burn it, and claim damages where de-bunkering (even at the owner's own expense) would have avoided the damages'

Homes of Texas. Inc. v. Shivers. 557 S. W2d 77. 81 (Tex. 1977), established the governing rule: Privity of contract is not required for an Article 2 implied warranty cause of action for economic loss. In Nobility Homes, a buyer brought a warranty action against a mobile home manufacturer to recover for economic loss when the buyer's contract was only with an independent retailer, not the manufacturer. Id. at 77. The Texas Supreme Court reasoned that 'to hold otherwise, would encourage manufacturers to use thinly capitalised 'collapsible corporations' to sell their commercially inferior products leaving no one for the buyer to sue for his economic loss.' Id. at 81-82. Thus, the Texas Supreme Court permitted the Nobility Homes consumer plaintiff to bring an implied warranty claim against a mobile home manufacturer, even though the plaintiff had not purchased his mobile home directly from that company.

It is unlikely that the Houston 'witches brew' cutter stock sellers, or blenders, made any express warranties about their product, but they very likely made implied warranties, knowing (at least the blenders did, blending to then-MARPOL VI and 8217 requirements) that their brew was intended for the safe operation of vessels and their machinery, and sale on to those who would sell for provision to those vessels.

Consequently Texas law would provide for a direct action by a third party (owner, charterer, trader, supplier) in at least implied warranty, with the four-year Texas statute of limitations⁶ applying, not any much shorter sales terms' contractual limitation (which would apply only to the direct counterparties to the contracts to sell the cutter stock, or to sell the finally-blended bunkers).

Hawaii, Iowa, Minnesota, North Dakota, South Dakota, Utah, and Wyoming have identified the 'Alternative C' of UCC § 2-318, and the following states have adopted (as Texas has) versions of UCC § 2-318, or other laws, that are similar: Arkansas, California, Colorado, Maine, Massachusetts, Mississippi, New Hampshire, Rhode Island and Virginia. Consequently, the sourcing of many bunkers blended in Texas, and California, including their (and cutter stock) shipment from

those locations, applies those states' law to extend the rights of third party owners, charterers, traders and upstream (non-blending) suppliers to recover damages from blenders whose blends cause damages, as well as those which provide cutter stock, or blend stock which causes damage, even where the damage is 'only' economic loss.

The relatively recent proliferation of patent applications, and issued patents, makes this liability important. That is, the patents, many of which are broadly drawn, may prompt blenders who seek to create blends outside of potential patent infringement liability, to create blends which are unstable or which use unsuitable cutter stock or blend stock. One of ExxonMobil's low sulphur blending patents (US9920270B2), for example, has 13 separate, relatively broad claims (essentially, recipes) for low sulphur blends, and then concludes with the following paragraph:

The above examples are strictly exemplary, and should not be construed to limit the scope or understanding of the present invention. It should be understood by those skilled in the art that various changes may be made and equivalents may be substituted without departing from the true spirit and scope of the Invention. In addition, many modifications may be made to adapt a particular situation, material, composition of matter, process, process step or steps, to the objective, spirit and scope of the described invention. All such modifications are intended to be within the scope of the claims appended hereto ...

Blenders which wish to stay outside of this patent will have to develop blends which are notably different than the broad 'recipes' of the patent, perhaps pushing the edges of blending expertise using other than tried cutter or blend stocks.

Likewise, the pressure to create lower cost blends (for more profit, or to sell more competitively) may prompt questionable blending (either techniques, or choice of cutter or blend stock). Just like the Houston 2018 situation, the blends presented to suppliers, and to traders and their charterer and owner customers, may not be capable (or practical) of prompt testing for ISO 8217/MARPOL VI compliance, particularly those sections requiring that the

fuel not damage vessel machinery or be harmful to personnel. Blenders, or providers of cutter or blend stock, whose blending or provision causes damage, should not be able to evade liability to those damaged, where they are in the best position to prevent a loss.

From that standpoint too, just like the Macbeth witches had (or claimed to have) special expertise, so also do blenders, particularly those operating under blending patents. That is, the patents claim to be 'recipes' for blends which will be compatible with other blends, including in the switchover process, from 0.50% to 0.10% ECA-compliant fuels. If the patented fuel does not operate 'as advertised' or the blend is not done following the patented process (which does), then again, the blender, whose blending requires highly specialised expertise, might be held liable in warranty (under those states' law permitting that).

Similarly, blenders using non-patented processes should be subject to similar liability, even if the cutter stock, blend stock and/or residual they choose to use in their blend, although on its own compliant, because of the blending process they use results in an off-spec (for example, non-homogenous, sludgy, asphaltene) product. Again, these blenders certainly would have known that they were blending for a marine use, to be 8217/MARPOL VI compliant. The result is at least implied warranty of their product, for which, under the states' versions of the UCC or similar laws as described above, they have liability if only for economic loss.

It should be of no surprise to anyone ordering per ISO 8217:2017 (or earlier) specifications that blending requires significant expertise – careful monitoring and documentation of sources, of blending procedures, and to assure that the blended product remains stable even if blended properly so it continues to be compliant once loaded aboard the vessel, stored and used. Although ISO 8217:2017's informative Annex B, 'Deleterious materials', states that:

[t]his document precludes the incorporation of any material at a concentration that causes the fuel to be unacceptable for use as stipulated in Clause 5 [,]

Annex B goes on to state that: Identifying and determining the

concentration of a material that causes the fuel to be unacceptable for use can be difficult given that

- a) each fuel is a unique, complex blend of hydrocarbon species,
- b) a wide range of materials from different sources can enter the marine supply chain from the production, handling and transport systems,
- c) various analytical techniques are used to detect specific chemical species with no standardised approach, and
- d) in most cases, sufficient data are not available with respect to the effects of any one specific material, or combinations thereof, on the variety of marine machinery systems in service, on personnel or on the environment.

It is therefore not practical to require detailed chemical analysis for each delivery of fuels beyond the requirements listed in Table 1 or Table 2. Instead, a refinery, fuel terminal or any other supply facility, including supply barges and truck deliveries, should have in place adequate quality assurance and management of change procedures to ensure that the resultant fuel is compliant with the requirements of Clause 5.

NOTE The marine industry continues to build on its understanding of the impact of specific chemical species and the respective critical concentrations at which detrimental effects are observed on the operational characteristics of marine fuels in use.

Buyers from the blenders, and their buyers – physical suppliers, traders, and charterers and owners – therefore have responsibility (and may share liability) along with blenders (who may also be the physical suppliers) to minimise their own losses.

Returning to state law suits under the 'economic loss doctrine': those claiming damage will, in most all US states, have the amount of damages they might recover in tort, reduced or even eliminated if they themselves are negligent. Texas and California follow a 'comparative negligence' rule, where damages are reduced by the percentage of the claimant's own negligence. In California, the claimant may be up to 99% negligent itself and still recover (Li v. Yellow Cab, 119 Cal. Rptr. 858 (Cal. 1975)); in Texas, the claimant may recover if it's up to 51% liable (Tex. Civ. Prac. & Rem. Code Ann. §§ 33.001-33.017). Four US states (Alabama, Maryland, North Carolina and Virginia) and the District of Columbia in contrast apply a 'contributory negligence' rule barring recovery if the claimant is even 1% liable. Other US states' contributory/comparative negligence rules fall somewhere between California and these four US states' rules8. With this, in most all US states, is the rule that those claiming damages must do what they can to minimise ('mitigate') their own damages. So, for example, a vessel owner discovering off-spec fuel may not proceed to burn it, and claim damages where de-bunkering (even at the owner's own expense) would have avoided the damages.

International Bunker Industry Association (IBIA) Best Practice Guidance for Suppliers for Assuring the Quality of Bunkers Delivered to Ships ('Best Practice Guidance', https://ibia.net/wp-content/uploads/2018/04/IBIA-Guidance-on-best-practice-for-fuel-oil-suppliers.pdf) sets out essential practices to follow. As the Best Practice Guidance (para. 1.3) explains:

The bunker supply chain from refinery to the point of delivery to a ship varies enormously; it can be long and complex. The final product may be a blend of components from multiple sources that may not be readily identified. It is therefore important to undertake checks and controls to ensure the end product meets relevant specifications and avoid any practices that may compromise the quality of fuel supplied to ships.

Consequently,

4.1.2 To ensure that the product conforms to relevant specifications the final blend should always be tested against the

'The problematic Houston cutter stock likely was low cost - if not free - given the alternative to the plants that had otherwise to pay to dispose of it. Putting it into the blended bunker production stream met two needs: for the plants to dispose of their waste cheaply and for the blenders to have cheap cutter stock'

relevant standards in a qualified laboratory and the test results should be documented. 4.1.3 In order to maintain quality control throughout the supply chain, it is important to have documentation to help identify product origins back to the manufacturing source and the various links in the chain to enable traceability, especially if problems arise to help pin point the source of the problem and take remedial action.

- 4.1.4 Once a bunker blend has been produced and tested, appropriate storage and cargo handling in shore tanks and onboard cargo and bunker supply tankers should be adopted to maintain product integrity.
- 4.1.5 If further blending is required, the new product should be tested again prior to delivery. If this is not possible, the supplier should be able to provide an accurate specification based on known blend component parameters and warrant that the resulting blend is homogeneous and stable.
- 4.2.2 Whether the bunkers are produced at a refinery, a tank terminal, on a tanker at anchorage or by in-line blending during delivery, the bunker supplier should ensure control of individual blend component quality. This includes knowing their individual properties through accurate data, and the component origins, supported by relevant documentation.
- 4.2.3 Blend components should be tried and tested so that their typical properties and suitability for bunker fuel production, and how they combine with other components, is well understood, with particular attention being given to the compatibility between blend components. Blending operatives should have appropriate knowledge of blending bunkers.
- 4.2.4 Where there are any uncertainties as to the nature and quality of a blend component, any issue should be identified and resolved before its use in the production of bunkers.
- 4.2.5 Ways for bunker suppliers to ensure the quality of blends include: Maintain a database of suitable and unsuitable blend components based on experience, industry knowledge and reported incidents Development and/or use of appropriate blend modelling tools Test new/unfamiliar blends rigorously against the requirements of ISO 8217 in its entirety
- 4.2.6 The blend should not contain extraneous, potentially deleterious, materials as defined in Clause 5 in ISO 8217 and Regulation 18.3 of MARPOL Annex VI. This does not preclude the use of additives intended to improve specific fuel

characteristics such as cold flow properties or combustion properties.

IBIA's Best Practice Guidance further details proper and sound procedures for physical suppliers (who again may include blenders) and those purchasing blends, which all in the chain of purchase of blended bunkers should be familiar with.

It will also be essential to be familiar with the imminently-issued ISO publication developed through MARPOL's Marine Environment Protection Committee (MEPC) (based substantially on IBIA's Best Practice Guidance), Publicly Available Specification (PAS) 23263: 'Guidelines for fuel suppliers and users regarding marine fuel quality considering the implementation of maximum 0.50%S in 2020,' ISO/AWI PAS 23263, to be published at www.iso.org/standard/75113.html:

The intention of PAS 23263 is to provide detailed guidance to fuel suppliers and users on the type of fuel blends that are anticipated to dominate the global bunker market in 2020.

ISO says that a PAS is published to respond to an urgent market need, representing either the consensus of the experts within a working group, or a consensus in an organisation external to ISO.

There is a lot of concern in the market about the nature of fuel blends produced to meet the 0.50% sulphur limit, especially with regard to stability, compatibility with other fuels and cold flow properties. The PAS is expected to provide guidance to help prepare fuel suppliers and users to manage these aspects.

So far in Houston, and elsewhere, bunker blenders, and providers of their cutter stock and blend stock, have not been in focus as possible payers of damage for damage from off-spec blended bunkers. As the demand for blended bunkers to meet the 0.50% requirement certainly builds to 2020 and blends

become the predominant means to meet 2020 MARPOL standards, however, there are sure to be more Houstons, and more witches offering brews. Those who do the brewing can cause 'powerful trouble'. They ultimately should be the ones most responsible to assure that 'the charm is firm and good'.

- International Bunker Industry Association (IBIA) Report, 31/08/2018, The end of the world as we know it, www.ibia.net/the-end-of-the-world-as-we-know-it.
- 2. Where United States maritime law controls, when the damage sustained results from a qualitative defect of the product and no person is injured or other property damaged, 'the resulting loss is purely economic,' and loss sustained 'due to repair costs, decreased value, and lost profits is essentially the failure of the purchaser to receive the benefit of its bargain traditionally the core concern of contract law.' East River Steamship v. Transamerica Delaval, Inc. 476 US 858, 870 (1986).
- Thankfully, the Houston problems did not cause any loss of human life; if they had, US maritime law would have permitted a direct suit by the persons injured against any involved in providing the non-compliant bunkers.
- It remains an open question whether in a situation where non-compliant fiel had led to vessel failure causing environmental damages, for example, in a marine preserve area, the supplier could be held liable. See the US Marine Sanctuaries Act, 18 USC §1443(a):
 - (a) Liability
 - (1) Liability to United States Any person who destroys, causes the loss of, or injures any sanctuary resource is liable to the United States for an amount equal to the sum of –
 - (A) the amount of response costs and damages resulting from the destruction, loss, or injury; and
 - (B) interest on that amount calculated in the manner described under section 2705 of title 33. (Emphasis added.)
- 4. A thorough summary of each US state's treatment of the economic loss doctrine is Economic Loss Doctrine in All Fifty States, Matthiesen, Wickert & Lehrer S.C. law firm (17 October 2018), at www.mwi-law.com/wpcontent/uploads/2013/03/economic-loss-doctrine-inall-50-states.pdf. Because US law on the doctrine continues to develop, is it especially important to research the most current court decisions before considering proceeding on any particular US state's law.
- For a summary of US states' limitations for times to sue, see www.nolo.com/legal-encyclopedia/statute-oflimitations-state-laws-chart-29941.html.
- 6. Texas Business and Commerce Code BUS & COM § 2.725. Statute of Limitations in Contracts for Sale.
- 7. See, for example, two patents assigned to Exx-

onMobil Research and Engineering Co.: US Patent US9803152B2, Modification of fuel oils for compatibility, application granted 31 October, 2017 presently in active status, https://patents.google.com/patent/US9803152B2/en (applied for also in the European and Canadian Patent Offices, and for world registration before the World Intellectual Property Organization (WIPO), and US9920270B2, Low sulfur marine bunker fuels and methods of making same, application granted 20th March, 2018, https://patents.google.com/patent/US9920270B2/en?oq=US+9920270+B2 (also with range of world-wide applications).

- A thorough summary of each US state treatment of comparative/contributory negligence rules is Contributory Negligence/Comparative Fault Rules in All Fifty States, Matthiesen, Wickert & Lehrer S C. law firm (14 February 2018), at www.mwl-law.com/wp-content/uploads/2013/03/contributory-negligence-comparativefault-laws-in-all-50-states.pdf.
- MEPC 72: ISO confirms plans to develop interim guidance for 0.50%S bunker fuel, IBIA, 26/4/2018, https://ibia. net/mepc-72-iso-confirms-plans-to-develop-interimguidance-for-0-50s-bunker-fuel.
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Simms Showers continues to be active representing major clients in the OW Bunker, Hanjin, and other maritime insolvencies and advises bunker suppliers and traders on credit security, recovery, sales terms and conditions and MARPOL-related issues, including those imminent for 2019, 2020 and beyond.

Steve Simms serves as Chair of the Legal Committee and is an immediate past Board member of the International Bunker Industry Association (IBIA). The opinions and recommendations of this article are not necessarily those of IBIA, except where identified specifically as such.

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