

# AN INTRODUCTION TO BUNKER CREDIT RISK

Adam Dupré





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## Dedication

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Without the support and patience of my wife and family,  
it would have been impossible to complete this book

**Adam Dupré**



# AN INTRODUCTION TO BUNKER CREDIT RISK

by

**Adam Dupré**

First Edition

Foreword by

**Stuart Kenner**

**Founder of MRC Business Information Group**

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# Foreword

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Adam Dupré has taken on the unenviable task of explaining the unexplainable and has risen to it with success. No wonder it has not been attempted before! This is a unique, precious and most important book. It is possibly even an essential one, for, since bunkers are bought on credit, no seller can sell a drop of oil without understanding the credit risk involved. This is calmly, precisely and patiently laid out here in a way that makes it clear and comprehensible to the reader.

It is not such a surprise that, if anyone could do this, Adam Dupré should be the one. He began analysing bunker credit risk at MRC in 1985 and has over 25 years of experience in assessing corporate success or failure, investigating maritime principals and companies, tracing assets, and training others to learn about marine credit and write intelligent and intelligible reports. In every case, and especially in recent years running Ocean Intelligence, any error is under the microscope, so getting it right matters. Readers of this book certainly benefit from this!

Whilst declaring a personal involvement in having engaged him at MRC, I hope I am objective enough to recognise a good thing when I see it and in this book I feel he has struck a rich vein of ore and mined it impressively. The vital importance of both company structure and industry sector is explained. We are taken through the crucial distinction between nominal ownership and actual control and the question of who is the actual credit party. It outlines the *whats* and *hows* regarding the essential need to understand both the micro side – the company being offered credit – and the macro side – the market context such as the subsector's tonnage position; hence the company's earnings situation, its worth and its debt position.

The global bunker market is worth many, many billions of dollars and it is constantly changing. Individual suppliers are heavily exposed financially and physically. One bad debt wipes out the profit on numerous other stems. Any fool can succeed in a rising market but it takes good management to steer through a falling one and both bunkers and shipping are cyclical businesses. So it is not just wise to be well informed about counterparties, not just profitable, but maybe even life or death. By the time a company's problems or a ship arrest are in the newspaper, it is too late – you have to be pre-warned and prepared.

I used to think that bunker credit was just that – a risk to be prevented if necessary. I soon learnt though that it is a sales tool and that there is no 'right' answer to the inherent, necessary conflict between sales and credit, competition and security, volume and margins. The balance varies over time, but a constant is risk assessment: you choose what risk to take but then you must know it. This is where this book is so important. There is a cost to recognising risk, but the reward for getting it right is great.

On a personal note, it is an enormous pleasure to see how a gleam in my eye so many years ago – that bunker risk needed specialist attention – is now mainstream,

with a book being published on it. I am delighted that the bunker industry, so huge and so exposed, recognises itself as such and has and continues to seek to order itself. The one thing we all know is that tomorrow will not be the same as yesterday, or today. Now though, we do all recognise this and having this book both exposes it and makes it clear how to proceed.

**Stuart Kenner**  
**Founder of MRC Business Information Group**

September 2010





# Preface

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This book is an attempt to introduce a very specific type of credit risk. Credit in the marine fuel sector has unique characteristics that are not found in any other sector. To assess and work with credit risk in the sector, it is necessary to understand both marine fuel market and the shipping market that it supports. This book offers an introduction to the markets, and to the tools and knowledge needed to understand and assess credit risk within them. The knowledge and understanding presented in this book are an essential basis for successful commercial decision making in the marine fuel supply sector.

The book defines an approach that depends more on knowledge and good judgment than on the application of mathematical formulae to publicly (or even privately) available data. In the shipping industry there is precious little of that type of data around.

The shipping markets are opaque and unique. Understanding and assessing credit risk for a supplier to those markets is both complex and necessary.

Anyone selling fuel to ships almost always does so on credit. The amounts of money involved can be substantial. There is no security of payment and margins can be thin, so customer default is always a danger and can be very serious for the supplier. For anyone involved in the business, it is essential to understand the dynamics of credit risk.

The book is the result of 25 years working in the specialist credit assessment sector. It is, as explained in the introduction, designed to be studied progressively as a source of learning, or to be dipped in to as a reference book. The Table of Contents and the Index should make it simple to go directly to passages on any relevant subject.

**Adam Dupré**

September 2010





## About the author

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Adam Dupré has been involved in company research, analysis and investigation within the maritime sector for over 25 years and is regarded as one of the most experienced company analysts in the maritime and commodity trading markets. He co-founded Ocean Intelligence, the first international marine credit reporting company to have a full trading presence in Asia, and has headed it since 2005. Adam also runs his own business, China Company Research Services Ltd, which provides specialist due-diligence reports on Chinese companies.

Adam was one of the founders of MRC Business Information Group, established in 1985 in Oxford, England. He was part of the core team that led it to become a top specialist provider of commercial information on companies in the shipping and allied industries. He also pioneered taking specialist company research skills to sectors beyond shipping. In 1989, he founded MRC Investigations, which became one of the world's leading maritime investigation operations, tackling international piracy, and undertaking international asset tracing and pre-litigation investigation. From 1999 to 2002, Adam was Managing Director of MRC, which is now part of the Informa Group Plc, a multinational publisher and conference group.

Adam has written articles for many specialist journals in Europe and North America and has lectured in the UK, Europe, China, South East Asia and the United States on bunker credit risk analysis and on the collection and assessment of corporate and commercial information on Chinese companies.

He is a Vice President of a UK/China business networking group, the 48 Group Club, and a founder member of China Advisory Network, an association of high-level independent consultants serving international clients working with China.

Adam lives and works in Scotland but also spends considerable amounts of time working in Singapore. On the occasions that he is able to contribute to credit-related seminars and courses, such as those offered by Petrosport, he is always willing to do so and can always be counted upon to do a good job.

**Llewellyn Bankes-Hughes**  
**Managing Director**  
**Petrosport Limited**

September 2010





# Acknowledgements

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This book has been written in moments between many other demands. Sometimes, as deadlines approached and vanished like small country stations on the route of an express train, it even challenged other duties directly. The patience and support of my colleagues in the Petromedia Group is therefore much appreciated.

I have to acknowledge the long term support and guidance of my many mentors over the years, most directly my old colleague and friend Stuart Kenner, without whom the Marine Credit Reporting industry would have a different shape. I also acknowledge here the benign influence of all the trainees and staff for whom I been responsible for many years – anyone put in the position of trainer or teacher must learn much of their craft from their students.

This book would never have been completed without the persistent – and I have to say patient – prodding of its publisher, Llewellyn Bankes-Hughes, whose friendliness, wit and positive support made palatable what might from a less urbane publisher have been unsupportable coercion. But then he has had many years of experience coaxing recalcitrant authors.

I am also indebted to John Phillips, Credit Manager of Chemoil Energy Ltd and Visiting Research Fellow for the University of Plymouth, for his incisive and valuable analysis of the shipping markets and country risk (Chapters 4, 5 and 6) which form important sections of this book. John was formerly the Operations Manager for Lloyd's MIU, responsible for credit reporting on Europe and the Rest of the World, having previously worked in tanker chartering and port agency.



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# Introduction

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This book is intended to serve as an introduction to understanding bunker credit risk. It brings together in a single document information that has hitherto existed only in the minds of people in the industry and has been variously presented at seminars and training courses. This information has not been brought together in a book like this before.

*An Introduction to Bunker Credit Risk* covers credit risk across the various maritime markets and presents and evaluates the tools available to assess and mitigate it. It also looks at the history of the bunker industry and the development of credit risk (and credit risk management) since the early 1970s, following the first oil crisis.

Anyone considering a career in the bunker industry, and anyone who is already training for a commercial position within it will find this book useful. As well as being a professional textbook, it has also been written to be accessible to the intelligent layman and includes additional features such as a glossary of terms used in the industry, but it is primarily designed to be a reference tool for people active in the sector. Both bunker traders and credit professionals need to understand the basic knowledge presented in this book.

The book has been structured and indexed to allow readers to find relevant passages quickly. It can thus be used either as a working training manual, working through chapter by chapter, or it can be dipped into for general reference.

The bunker market is a relatively small section of the international oil industry, but it services the entire transportation network of world trade. It has some characteristics that are unique in the oil trade, the most significant one being that bunkers are sold on open and unsecured credit, another being the typical size of a stem or sale of fuel.

At times when oil prices are going up, and/or shipping revenue is under downward pressure, credit risk in the bunker sector, always an important consideration, becomes critical. Hence it is essential for anyone operating in the industry to understand the nature of the risk and what tools are available to assess and mitigate it.

'Bunker fuel', or 'bunkers', is the term used to describe the fuel burned by ships' engines. It is also known as 'marine fuel'. The term 'bunkers' derives from the containers on coal fired ships used to store fuel until the use of oil as fuel became universal soon after the World War I. For reasons that seem not to be generally known, the term for the container of fuel has come to be almost universally applied now to the fuel itself.

The word bunkers can cover a range of fuel types, but they are broadly categorisable into Intermediate Fuel Oil (IFO) and Distillates (Marine Diesel Oil – MDO – and Marine Gasoil – MGO). IFO is currently burned by the vast majority of ships' engines. It is a blend of (mostly) residual fuel or heavy fuel oil and is basically a waste product; what is left at the end of the oil refining process after gasoline, kerosene, gasoil and

other high-end products have been refined out of crude oil. This is cut with sufficient distillate fuel to make it usable (i.e. to make it flow).

IFO is sold as bunkers classified by the level of viscosity of the fuel, measured in centiStokes (cSt) – the most commonly sold grade is 380 cSt, followed by the lower viscosity 180 cSt. Other grades of IFO are also sold. However, it should be noted that international emission control regulations, being introduced over the next 10 or so years from the date of publication of this book, may well mean that ships will not be able to burn IFO fuels at all as they cannot be de-sulphurised to the levels that are likely to be required under international regulation.

The way it is looking today, either the world fleet will have to install emission-cleaning technology, or use distillate-only fuel. It is not the job of this book to discuss the likely implications of these changes on the shipping industry, but they will inevitably increase the cost of ship operation in the future, one way or another, and any increase in the cost of operating a ship potentially increases the credit risk.

In Chapter 1 it will be seen how, historically, this waste product came to have a value in itself, and how, after 1973, the consideration of credit risk entered the market – like the serpent into the Garden of Eden.



# Chapter 1 - The bunker market

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## Origins

From the end of the 19th century, with a notable increase in usage from 1911 when the Royal Navy converted from coal to oil as fuel for all its vessels, oil has become increasingly the primary fuel used in world shipping. Until the 1950s, most ships' engines burned diesel oil, but a gradual conversion to the use of fuel oil started around 1950, accelerating in the 1970s following increases in the oil price, and since then the majority of the engines of the world fleet have used residual fuel.

With the introduction of emission control regulations by the International Maritime Organization (IMO) in the 2000s, the world fleet will have to either adjust back to the use of diesel fuel or introduce emission abatement technology aboard ships by around 2020. The fuel oil era in shipping will have lasted some 60 years when it comes to its likely end.

The original relationship between ship operators and refineries was symbiotic. While a large amount of residual oil from the refineries has gone into the power generation sector, maritime use has been significant since the second part of the twentieth century. The marine market is considered to consume about 30% of world fuel oil production.

Until 1973, the price of bunker fuel formed a more or less insignificant element in the cost of ship operation. Bunkers were supplied by the producers to the end users with virtually no intermediary involvement and at a price not much above delivery cost. Basically there was practically no credit risk in the supply of marine fuel. If a player defaulted on payment the loss was hardly significant.

## A market is born

However, this changed almost overnight with the first oil crisis, in 1973. With the Organization of the Petroleum Exporting Countries (OPEC) successfully holding the world to ransom and causing hugely dramatic increases in the price of crude oil, the price of all products, and also of residual fuel, also rose. Bunker fuel has always roughly tracked the price of crude oil.

Two things happened. One was the opportunity for a market to develop as fuel oil now had a value, the other was the appearance of credit risk in the bunker market. Major oil companies, which had supplied directly into the marine fuel market up to that point, suddenly found themselves carrying millions of dollars of credit risk. They were very happy to spread that risk by passing it to intermediary players who would then carry a proportion of the credit risk.

### Enter the trader

In the 1970s, for the first time, independent traders began to enter the market. Early examples were Tramp Oil and Marine (now part of the giant World Fuel Services Inc.) founded by Chris Carlsen in 1975, Cockett Marine Oil set up in 1979 by Neil Cockett (now owned by South African company Grindrod) and Chemoil, founded by Robert Chandran in 1981 (publicly listed in Singapore). Before the oil crisis, there was not sufficient value or margin to be made in bunkers to make international trading of the product a commercially attractive proposition.

### Trading grows up

In the 1980s and 1990s, international bunker trading came into its own as a market. The major oil companies have always dominated production of fuel oil, and in a cycle akin to breathing, over the years have been first happy to leave delivery of bunker fuel (and some of the credit risk) to third parties, then trying to take it back to themselves. Currently, the majors all have their own bunker trading/supply operations, but are happy to allow a symbiotic arrangement with the independent sector. In reality, the independent bunker sector is so strong that there is no real prospect of its business being absorbed back into the major oil companies. However, it is certainly foreseeable that there will be considerable consolidation in the sector as a whole and that in a few years' time there may be fewer players than there are now.

Today there are thousands of bunker traders and suppliers in the world. Very generally speaking, there are five basic tiers in the market: the major oil companies (Shell, Chevron, ExxonMobil, BP, etc.); the large independent traders (World Fuel Services, Chemoil, OW Bunker, Dan Bunkering, Aegean and others); the medium-sized independents (Peninsula Petroleum, Praxis Energy Agents, etc.), and the smaller independents (Ocean Energy, Searights and many others). There are also national oil companies, such as Petrobras Bunkering of Brazil.

### The supply chain

The bunker supply chain starts at the refinery, where the production of residual fuel is a natural by-product of refining out top-of-the-barrel products like kerosene and gasoline, leaving eventually an irreducible waste at the bottom of the barrel – fuel oil. Modern refineries extract more valuable high-end products from crude and are therefore producing lower volumes of fuel oil, though less sophisticated refineries in developing countries still tend to produce higher volumes of residual product. The chain ends with the buyer, the ship. In between is potentially a number of intermediaries (see flow charts at the end of this section).

Bunker traders buy fuel oil from the producers and sell it on to end users. Traders may or may not have the direct physical capacity to deliver fuel to ships in port. If they do not, they will appoint local physical suppliers. Often buyers needing to bunker in ports where they are unfamiliar with the local supply market prefer to have their own traders arrange their bunkering for them. In these cases, a Danish ship operator (say) will ask his Danish bunker trader to arrange a bunker stem in (say) Mumbai. If the trader

has no physical operation in Mumbai, he will deal with a local physical supplier. The trader takes a position on the deal; in other words he will get credit from the producer or physical supplier and the physical supplier's or producer's credit risk lies with him. Though the local physical supplier actually delivers fuel to the ship, he is paid by the trader, not the shipowner. In turn, the trader pays the physical supplier. At each step in the process, a margin will be made, and a credit risk taken by the seller.

The physical supplier delivers bunkers to the ship by whatever method (usually either barge or by pipe alongside). He is responsible for having the volume and specification required ready to deliver at the appointed time.

A further possible member of the supply chain is the bunker broker, who introduces the buyer and the seller and takes a commission for his services. Brokers have marginal credit risk – basically the relatively small fee paid to them by the supplier or trader. The real credit risk in a bunker transaction always lies between seller and buyer and the broker is not a significant feature in this process, except that a broker's introduction may in certain cases introduce a level of trust between seller and buyer that may (or may not) be entirely justified. We will not be referring to bunker brokers extensively in this book. They may be significant players in the supply chain sometimes, but they are not major factors in terms of credit risk.

### **The Bunker Supply Chain – possible buying structures**

- Refiner ► Ship
- Refiner ► Supplier ► Ship
- Refiner ► Trader ► Supplier ► Ship
- Refiner ► Trader ► Broker ► Trader ► Broker ► Supplier ► Ship

## **Fuel delivery**

In terms of an actual bunker delivery, it is the responsibility of the Chief Engineer on board ship to ensure that the fuel delivered is of the correct quality specification and volume. There are a number of testing agencies that test the quality and volume of deliveries, and the chief engineer is unlikely to load sub-specification fuel as this could seriously damage his engines, but it is not uncommon for volume to be short by mutual agreement between the chief engineer and the physical supplier. This in itself does not necessarily directly affect the credit risk involved. However, it should be noted that a negative quality testing report, whether or not justified (bunker specification is by nature not a very exact science and therefore there are issues with testing), can on occasion be used by a buyer to raise queries over a delivery and thus delay payment. In some cases this payment delay may be the sole purpose of the dispute by the buyer. It is a significant aspect of the analysis of the market reputation section of a credit report (see Appendix 2) to highlight buyers who are known to have this propensity. Naturally there are genuine cases for bunker disputes between buyer and supplier.

The importance of correct fuel quality is illustrated by the following quote from a manufacturer of fuel testing equipment:

*'Residual fuel oils contain large proportions of "left-overs" from secondary refining, i.e. visbreaking and catalytic cracking, etc. A particular consequence for marine fuels has been the increase in use of higher viscosity and density grades that sell for the lowest prices. Also, as the various impurities carried in the crude stock are not extracted with the more valuable hydrocarbon fractions they remain and are concentrated in the residual fuel grades. Today the engine designer has to develop machines capable of operating on the worst grades of fuel available. This is not an easy task as the properties of these fuels are constantly varying.*

*'Once the fuel is bunkered, it is the chief engineer's responsibility to see that it is both acceptable and provided with the correct treatment to render the fuel suitable for use in the engines. Fuel has to be settled, purified, preheated and filtered etc, in order to render it fit for injection systems. During handling and treatment on board, a number of problems can occur. These problems differ in scope and severity from fuel to fuel and ship to ship but it is correct to say that every engineer has experienced them as a matter of daily routine.'*

Kittiwake Developments Ltd ([www.kittiwake.com](http://www.kittiwake.com))

### Some modernisation, but still an old fashioned industry

Today the bunker market is a complex worldwide industry. In the last 10 years or so, it has become financially much more sophisticated, with many traders offering hedging and other cost management services. The dramatic increases in bunker prices in 2007 were a particular stimulus to develop the financial sophistication in the sector. Recent years have also begun to see the approach of third party invoice management providers to the bunker markets, though this process is still young and none of the companies has yet made significant headway in the market.

However, from a credit point of view the bunker supply market remains stubbornly in the dark ages, with unsecured open credit given at levels that would be unthinkable in any other sector – even where the creditor owns stationary tangible assets in an accessible jurisdiction. Although the industry may be becoming more sophisticated in the smart offices of traders in Denmark, London, Hamburg or Singapore, on the ground the core activity is the basically dirty business of pumping the waste product of oil refineries into ship fuel tanks. While in the bigger bunker ports – especially Singapore – the market is increasingly and (it must be said) organically regulated, in smaller ports bunkering remains a pretty crude activity.

Bunkering is a completely international business. There are thousands of players in the market, thousands of ships and thousands of trades, from huge international liner operations down to tiny intra-harbour support vessels. All need fuel and the bunker industry has grown exponentially in order to deliver that fuel to the boats that need it.