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Electronic Bill of Lading

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Summary

This thesis deals with an urgent topic today – the challenges of implementing electronic bills of lading in international trade. Lots of advantages can be gained from introducing them, for example a better environment, lower prices of documentation and an easier contractual procedure.

In the master thesis, the legal method is combined with interviews and enquiries with different interested parties in this line of business – banks, shipping companies and forwarding agents.

The results show that the lack of success for the electronic bills of lading is attributable to the general resistance and a conservative view among the aforementioned parties and that the legislation often is either obsolete or that the provisions do not support the new technology in a way that is appropriate. It seems like the technical solutions develop faster than the legal ones.

The work has predominantly been focused on a number of features that are compared between the electronic bill of lading and the paper-based bill of lading. These features are the written document, the signature, the original and negotiability. Especially the first three features are closely related. As to the signature, it can be done with digital signatures, but the problem is that it is not possible to guarantee that the document is handled confidentially, unless no appropriate cryptographic method has been elaborated.

The rules that regulate the activities of the shipping companies are principally based on civil law and contracts. A development towards incorporating the rules governing electronic bills of lading and electronic letters of credit could increase the pace of the change towards a more common use of electronic transport documents.

Another observation is the problem as to the possibility of replicating electronic documents, compared to paper documents. This feature may also be a serious impediment to the use of electronic bills of lading.

Sammanfattning

Detta examensarbete behandlar ett aktuellt ämne – utmaningarna i att implementera elektroniska konossement i den internationella handeln. Många fördelar kan erhållas om de införs, exempelvis en bättre miljö, lägre kostnader för dokumentation och en enklare metod för att sluta avtal.

I examensarbetet kombineras den juridiska metoden med intervjuer och enkäter med olika aktörer i branschen – banker, rederier och speditorsfirmor.

Resultatet visar att bristen på framgång för de elektroniska konossementen beror på ett allmänt motstånd och en konservativ hållning bland marknadens aktörer samt att lagstiftningen i många fall antingen är föråldrad eller att bestämmelserna inte ger ett tillräckligt tydligt stöd för den nya tekniken. Det förefaller som om de tekniska lösningarna utvecklas snabbare än regelverken.

Arbetet har huvudsakligen inriktats på ett antal egenskaper som jämförs mellan elektroniska konossement och papperskonossement. Dessa utgörs av det skrivna dokumentet, underskriften, originalet och möjligheten att överlåta. Särskilt de första tre är intimt sammankopplade. Beträffande underskriften kan den göras med hjälp av digitala signaturer, men problemet ligger i att man senare inte kan garantera att dokumentet hanteras konfidentiellt, såvida en lämplig kryptografisk lösning inte har utarbetats.

Regelverken som rederierna har att följa är mestadels baserade på civilrättslig lagstiftning och avtal. En övergång till att införliva reglerna för elektroniska konossement samt elektroniska rembuser med de nationella lagarna skulle kunna skynda på processen mot en ökad användning av elektroniska transportdokument.

Ytterligare en iakttagelse är de problem som är förknippade med möjligheten att skapa ett obegränsat antal kopior av elektroniska dokument, jämfört med pappersdokument. Denna egenskap kan också utgöra ett allvarligt hinder för användning av elektroniska konossement.

Abbreviations

CISG	United Nations Convention on Contracts for the International Sale of Goods
eUCP	Electronic Uniform Customs and Practice for Documentary Credits
CMI	Comité Maritime International
COGSA	Carriage of Goods by Sea Act (1992)
EDI	Electronic Data Interchange
ICC	International Chamber of Commerce
INCOTERMS	International Commercial Terms
LDC	Least Developed Countries
OECD	Organisation for Economic Co-operation and Development
P & I Clubs	Protection and Indemnity Clubs
SWIFT	Society for Worldwide Interbank Financial Telecommunications
TT Club	Through Transport Club
UCP	Uniform Customs and Practice for Documentary Credits
UNCID	Uniform Rules of Conduct for Interchange of trade Data by Teletransmission
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Conference on Trade and Development
VAN	Value Added Network Service
XML	Extensible Markup Language

1 Introduction

1.1 Background

Electronic bills of lading constitute parts of the modern electronic commerce. This trend has lasted for at least 40 years, and is still ongoing. However, there are still resistance to the complete implementation. During the work with this thesis, and especially when reading material that has not been presented in the thesis, it has turned out not to be a clear imbalance between developing countries and developed countries. In Sweden, regarded as a developed country, there is so far no evidence that electronic bills of lading are nowadays a general means of dealing with the contract part of the business.

The notion of trust seems to be a very relevant part of this issue. In practice, an electronic transfer of a property right would not be acceptable in the absence of this component.

1.2 Purpose

The purpose of this thesis is to seek the explanations for the problems of introducing electronic bills of lading in international trade. The issue is: Why is there so far no breakthrough in the use of electronic bills of lading? The thesis will focus on Swedish Rules, which are compared with other rules. After all, shipping is an international business, and the legislation in the respective nations are influenced by the widespread conventions such as the Hague-Visby Rules, the Hamburg Rules and finally the Rotterdam Rules. Sweden is a party to the Hague-Visby Rules.¹

An abolishment of all the papers involved when selling goods from the exporter to the importer could result in many advantages, for example lower prices and a better environment.

1.3 Disposition

At the beginning of the thesis, there are descriptive parts about the history of bills of lading. It has been in use for hundreds of years. The next section deals with the electronic bills of lading today. Relevant provisions in conventions and a summary of current systems are presented. One of the objectives of the Rotterdam Rules is to facilitate the use of electronic records. It is also important to get an overview of the CMI Rules for Electronic Bills of Lading. These Rules have constituted a prototype of the latter Rules and have had a considerable impact on them. The reason for bringing double sale into the analysis is to choose one kind of bill of lading

¹ www.upf.pf/IMG/doc/4Myburgh.doc (2010-05-18)

fraud and seek to determine to what extent the electronic documents may contribute to the success or lack of success of these alternatives.

In this thesis, relevant finance rules are brought into chapter 5 in order to describe the role of documentary credits in the shipping industry. UCP 600 and eUCP are commonly used by the banks. The limits and possibilities of the rules as to electronic transport records will naturally affect the possible success of electronic bills of lading. Thus, it does not only depend on whether the maritime regulations, systems like TradeCard and conventions such as the Rotterdam Rules and other similar rules, do give protection to or enable the use of electronic documents.

1.4 Method and material

The thesis combines a dogmatic method including analysis of regulations, articles in conventions and travaux préparatoires of the Rotterdam Convention with qualitative methods. There is very little case law in this field, which is the reason why other sources are predominant in this work.

In order to get a deeper knowledge about this topic, interviews as well as questionnaires have been carried out. When doing that, it is important to be aware of the way the questions are formulated and how rigid or open the interview is as to the number of prepared questions. It is also crucial to analyze the number of responses in relation to the number of submitted questionnaires and interpret the significance of a certain decline. Luckily, the proportion of responses in this work has been high – 6 out of 9 responded to the questionnaire or participated in an interview. Consequently, a 67 % participation rate was achieved. There were four questionnaires filled out and two interviews were carried out – one with a bank and one with a shipping company. The questions were almost the same, but slightly different in the interview, because of the need for flexibility in that case. The patterns were very similar, regardless of whether it was a shipping company, a forwarding agent or a bank that responded. However, a last question was added in the questionnaires to shipping companies and forwarding agents, but not to the bank:

“Is it possible to resell cargo to new buyers while the vessel is at sea if the bill of lading is not a paper?”

This type of question is more relevant to the former sorts of companies than the latter, since they work more directly with the handling of the cargo. It is important to note that the part of the thesis that consists of interviews and questionnaires does not constitute part of the actual method. It does only serve as a complement and a way of providing a deeper insight into the industry.

1.5 Delimitations

A thorough analysis of the former conventions like the Hague Rules, the Hamburg Rules, the York-Antwerp Rules and the Hague-Visby Rules has been omitted. The reason is that part of this work is the aim to predicting the future situation and look at the most common regulations from now on. Furthermore, in the Rotterdam Rules there is an emphasis on the electronic documents. The main perspective is Swedish and most of the companies who have given response are principally operating in this country. Sea waybills will be mentioned briefly, since they operate side-by-side with the traditional bills of lading and the electronic bills of lading.

Some issues with regard to electronic bills of lading are chosen to be analyzed:

- A written document – is it a requirement that the document is written to be valid?
- Signature – does it suffice to have an electronic signature?
- Original – What does it mean that a bill of lading must be in original?
- Documents of title and negotiability.

2 Bill of Lading

2.1 History

The bill of lading did not exist by the eleventh century. However, there was a ship's register used to stipulate what cargo the ship contained. In the fourteenth century, the use of on-board-records was commenced, and this symbolized the introduction of the bill of lading as a receipt of the goods. No separate record of the cargo loaded on board was issued. Merchants and correspondents of the goods started to claim to receive copies of the ship's register. The shippers followed the goods by being present on the vessel, and a certain person had to prove his identity at the port of discharge. Therefore, there was no need for a bill. The possession of the document did not equal title to (ownership of) the goods; it was a mere receipt. Furthermore, there was no transferability as there was no intention to resell goods in transit.²

The characteristic of transferability arose in the 16th century. It is questionable whether the bill could give entitlement to the goods before this period, given that it cannot be assessed that bills were traded or transferable. The need for giving the bill the transferable feature can be understood as goods were often loaded onboard and sent without having a final destination at that point of time. Anyhow, it was still uncommon to resell goods while the vessel was still at sea. The change was important in the sense that the bill now proved possession to the goods. Two centuries earlier neither the ship's register nor the bill did prove this title.³

The sixteenth century was a transitional period as to the contractual function of the bill. There were bills without independent terms and there were bills without references to other documents, which was a sign of the terms of the bill constituting in themselves the agreement that was made between the parties. Still, the bill of lading was not a complete contract, since the shipper was also a party to the charterparty in relation to the carrier.⁴

The document of title function, unique to the bills of lading, is only about two hundred years old. The other two characteristics, the evidence of contract and that of receipt, which will be described in the next part, date back much longer. They originate from the period when transport activities with merchants leaving their cargo to anybody else began.⁵

In the Roman Empire there were appropriate land transportation systems. The transports by road were widely used in France and Austria in the 16th

² Aikens/Bools/Lord 2006, *BILLS OF LADING*, pp. 1-2.

³ Ibid. at p. 3.

⁴ Ibid. at pp. 4-5.

⁵ Grönfors 1991, *Towards Sea Waybills and Electronic Documents*, pp. 20-22.

and 17th centuries. The delivery of the goods during these periods did require neither presentation nor surrender of a paper document. What was the reason? One explanation is that these waybills only represented a notice to the receiver, not involving the carrier. It was not a promise from the carrier to deliver the cargo to a specific, named consignee.⁶

Later on, the consignor presented the letter to the carrier who had to endorse it to confirm the correctness of the information. The next step was that the sender indicated in the waybill or to a person a certain consignee who was entitled to receive the goods.⁷

The conventional, tangible bill of lading was a convenient solution for many years, but in the early 60's a crisis had arisen. The reasons turned out to be the salient lowering of the transit time for cargo. There was a considerable increase in the number of container ships, the stop-over periods were shortened and the cargo-handling procedures in terminals became more efficient. At the same time, the postal services were getting slower internationally. These problems led to cargo stored in harbours, while the receivers were waiting for the bills of lading to arrive.⁸ Paul Todd, professor at the University of Southampton, describes this change, adding that the problem is more serious in liner shipments and fast container ships in the North Atlantic.⁹ The crisis has resulted in debates about how to modernize the bill of lading.

2.2 Bills of lading types

The goods are traditionally released from the vessel upon surrender of an original bill of lading at the port of destination.¹⁰ The second criterion that must be fulfilled in order to receive the goods is that the contents of the bill of lading indicate the rightful receiver of the goods. In Nordic law it is called "the doctrine of presentation".¹¹ There is case law supporting this view, Ellida ND 1902 p. 117 (SH).¹²

There are "negotiable" and "non-negotiable" bills of lading. The imprecise use of the terms "transferable", "negotiable" and "document of title" complicates the issue of distinguishing these intertwined words.¹³ A non-negotiable bill is not a bill of lading at all under COGSA 1992.¹⁴

⁶ Ibid. at p. 25.

⁷ Ibid.

⁸ Ibid. at p. 26.

⁹ Todd 1987, *Cases and material on bills of lading*, p. 334.

¹⁰ Grönfors 1991, *Towards Sea Waybills and Electronic Documents*, p. 11.

¹¹ Johansson 2001, *Stoppningsrätt under godstransport*, p. 311.

¹² Ibid, at p. 311.

¹³ Aikens/Bools/Lord 2006, *BILLS OF LADING*, pp. 18-19.

¹⁴ Ibid, at p. 19 and COGSA section 1(2)(a) excludes the use of documents by setting out "which is incapable of transfer either by indorsement, or, as a bearer bill, by delivery without indorsement".

There exists an amount of different kinds of bills of lading, with different wordings as to describe the type of transferability and the relation to the consignee:¹⁵

- *The “classic” bill of lading: “to order”, or “to X or to order”, or “to X or his order or assigns”*. If none of these wordings occurs on the bill, or if it is marked “non-negotiable”, entails that the bill of lading is not a negotiable one. In case law (*Kum v. Wah Tat Bank*) it was held that “negotiable” means transferable. It can never give a better title to the transferee than the transferor had, “but it can by indorsement and delivery give as good a title”. According to the same case, this is what distinguishes the bill of lading from a bill of exchange; the latter can give the transferee a better title than the transferor.¹⁶ Classic bills of lading are also called *order bills*.¹⁷

- *Bearer bills*: marked with the text “to order”. The carrier must deliver to the holder (or bearer) without the requirement that the holder is a named consignee or indorsee.¹⁸

- *Order bills*: “the consignee is described as “to order”, or “X or order” or “to the order of X”. The consignee can be named in two ways: “to X or his order” or “to X or his assigns”. There is no legal difference between the two latter wordings. An order bill is the typical kind of a bill of lading and is covered by COGSA 1971 and 1992 as well as UCP 500.¹⁹

- *Straight consigned bills*: the consignee is a named party but there is no reference to “to order”. In a leading case on bills of lading, *The Rafaela S*, the House of Lords ruled that one has to make a distinction between straight bills and sea waybills. Lord Steyn held:²⁰

“In the hands of the named consignee the straight bill of lading is *his* document of title. On the other hand, a sea waybill is never a document of title. No trader, insurer or banker would assimilate the two. The differences between the documents include the fact that a straight bill of lading contains the standard terms of the carrier on the reverse side of the document but a sea waybill is blank and straight bills of lading are invariably issued in sets of three and waybills not. Except for the fact that a straight bill of lading is only transferable to a named consignee and not generally, a straight bill of lading shares all the principal characteristics of a bill of lading as already described.”

2.3 Transfer of property rights

This section deals with rights that are inherent in the bill of lading under common law - property rights. It should be mentioned that also other rights are tied to the bill of lading – contractual rights, which can be transferred.²¹ The bill of lading confers on the transferee a symbolic possession of the

¹⁵ Aikens/Bools/Lord 2006, *BILLS OF LADING*, p. 19.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid. at p. 20.

¹⁹ Ibid.

²⁰ Ibid. at pp. 20-21.

²¹ Ibid. at p. 154.

goods, but it does not necessarily confer title to the goods on the same person.²² This symbolic possession entails three factors:²³

1. The carrier is obliged to deliver the cargo only to the holder of the bill of lading. The holder of the bill thus is given the same legal position and rights as if he had been a party that actually had the possibility of taking/having custody of the goods.
2. The transfer of the bill is connected to an assumption in which the transferor surrenders his claims to get control of the goods or to seek to prevent the transferee from obtaining possession of the goods.
3. The transfer of the bill leads to the opposite assumption, i.e. the intention to exercise control and excluding others from doing the same.

A bill of lading can be transferred to a bank or an agent and be pledged as a security. When this is done, the bank or the agent is considered a *pledgee*.²⁴ “Thus, where the seller discounts it with his agent, and sends the draft, with the bill of lading attached, to the bank or agent, provided that it or he accepts the draft, he takes a pledgee’s special property, and has an implied right of sale although not foreclosure”.²⁵

2.4 Features of the bill of lading

2.4.1 Evidence of the contract of carriage

The bill of lading constitutes a contract of carriage. This means that the bill of lading is only an evidence of the contract – it is not the contract itself. The previous one is normally concluded orally before the issue of the bill of lading.²⁶ Case law indicates that damaged or lost goods prior to the issue of the bill of lading will not deprive the shipper from remedies for breach of contract.²⁷

2.4.2 Receipt of goods

The receipt function was the only original function of the bill of lading. Without the bill of lading it was impossible to be entitled to receive the goods at the port of discharge.²⁸

The fact that the document serves as a receipt means that the carrier confirms the quantity and condition of the cargo when it was received. There are several implications of this:

1. It forms the basis of cargo claims.

²² Ibid. at p.106.

²³ Ibid. at p. 107.

²⁴ Ibid. at pp. 115-116.

²⁵ Ibid. at p. 116.

²⁶ Wilson 2008, *Carriage of goods by sea*, p. 127.

²⁷ *Pyrene v Scindia Navigation Co* [1954] 2 QB 402.

²⁸ Wilson 2008, *Carriage of goods by sea*, p. 116.

2. Under c.i.f. terms, the buyer could reject the documents if the bill of lading description of the cargo did not correspond to the description in the sales invoice.
3. Additionally, it was under c.i.f. contracts, possible to entitle the buyer or bank to require the production of a 'clean' bill.

2.4.3 Document of title

This feature is connected to transferability and negotiability. The bill of lading is a symbol of the goods. This entails that possession of the bill of lading equals to possession of the goods themselves.²⁹ However, it is important to note that possession of a bill of lading is not totally equivalent to possession of the goods. For example, the seller has in all situations a right of stoppage in transit. This right always prevails when it is put into conflict with the interest of protecting the buyer who possesses the document. The right of stoppage does not depend on the presentation of any transport document. Moreover, the holder of the bill of lading is not entitled to demand a discharge of the goods. The carrier has the right not to do so. On the other hand, if the carrier follows an instruction given by someone who is not in possession of one original bill of lading, he will be responsible for any damage caused thereby.³⁰

There are four requirements that have to be fulfilled in order to alter ownership of the cargo once the bill of lading has been surrendered at the port of discharge:³¹

1. The bill must be transferable on its face. This means that it is forbidden to make the bill non-negotiable or to designate a specific person to be the receiver of the goods.
2. The goods must be in transit at the time of endorsement. Although what is stated in that sentence, it does not entail that the goods must be at sea.
3. The bill must be initiated by a person with good title. A bona fide transferee does not get a better title to the goods than the transferor did. The bill cannot create an ownership that did not exist in the beginning, i. e. when it was in the possession of the endorsee.
4. The endorsement must be accompanied by an intention to transfer ownership in the goods covered by it.

The Swedish professor Svante Johansson describes the document of title feature in a similar way, and he highlights three basic qualities:³²

- “1. The right to order delivery at a place other than the destination, i. e. to dispose over the goods in transit.
2. The right to take delivery at destination.
3. Transferability of the document.”

²⁹ Ibid. at p. 131.

³⁰ Grönfors 1991, *Towards Sea Waybills and Electronic Documents*, pp. 14-16.

³¹ Ibid. at pp. 131-132.

³² Johansson 2008, *An outline of transport law*, p. 67.

Number one is about the buyer's right to dispose over the goods when they are still at sea. Being protected from dispositions by the seller at this point is important for both the buyer and a bank that may have security interests if the goods serve as a pledge. Number two is tied to specify a rightful consignee to receive the goods, and it is only he or she, whoever it is, who is entitled to get a grip on the cargo. The third factor, transferability of the document, is connected to the representative function of the bill of lading enabling the seller to sell the goods automatically if he sells the document to anybody.³³

2.5 Sea waybills

In this section another type of document, the sea waybill, is overviewed. It shares some of the features of conventional bills of lading.

A sea waybill is not a document of title, but it is a receipt as well as a contract of carriage.³⁴ The only rightful receiver of the goods is the consignee that is named in the document. There are similarities between sea waybills and air waybills in this respect. It is only the sender of the cargo that can dispose of it *in transit*.³⁵

A considerable advantage of the waybill is that it does not give rise to the risk of documentation arriving later than the cargo. The use of the waybill is steadily increasing, and nowadays about 85 % of the Trans-Atlantic trade involving container ships can be administered by waybills. The reason is that the goods are not supposed to be resold, which means that one consignee that is named in advance suffices. No other party can be entitled to obtain delivery.³⁶

The waybills were originally used for air and land transportation, which is a kind of transportation characterized by short time between dispatch and delivery.³⁷

A waybill is similar to a short form bill of lading, since both have a blank back and the carrier's standard terms and conditions are incorporated in a specific clause.³⁸

³³ Ibid.

³⁴ Aikens/Bools/Lord 2006, *Bills of Lading*, p. 15.

³⁵ Johanson 2008, *AN OUTLINE OF TRANSPORT LAW*, p. 74.

³⁶ Wilson 2008, *Carriage of goods by sea*, p. 158.

³⁷ Ibid.

³⁸ Ibid.

3 Electronic Documents

3.1 Introduction to electronic commerce

3.1.1 Overview and relation to commercial law

There are general acts and conventions on electronic commerce and there are those who are intended for electronic bills of lading specifically. There are also international conventions governing the relationship between the shipper, the carrier and the consignee of bills of lading.³⁹ Their provisions do not explicitly state that electronic bills of lading are accepted according to the regime. This will be described in 3.2 and in the following sections.

Before going into details in the electronic documents regimes, a few general things regarding the division of this legal area should be mentioned. First, it is crucial to look at the types of contracts involved: contracts of sale and contracts of carriage, where the latter is subordinate to the former.⁴⁰

Contracts of carriage is part of maritime law, as well as contracts of affreightment. Maritime law is part of transportation law, which in turn is part of more general sale regimes, which will be outlined below. We have to assess how the general trade can be described - how *lex mercatoria* is defined. On top of it, CISG and Unidroit Principles are found.

CISG is a very successful multilateral treaty. Its scope is constrained by article 1, which separates international sale of goods regimes from domestic ones.⁴¹

3.1.2 Electronic documents in general

Over the last decades, there has been a trend towards electronic documentation. Jelena Vilus discusses in an article the prospects of a development towards more electronic commerce in the future.⁴² This change has already begun, but will the legal framework steadily be prepared for and keep up the pace of the technological progress in society? She writes that the aforementioned development started at the beginning of the 1970s. Furthermore, she discusses the role of different parties: developed countries, developing countries and the least developed countries (LDC). These are, according to the report "E-commerce and development", made by UNCTAD: Bangladesh, Cambodia, Ethiopia, Madagascar, Mozambique, Myanmar, Nepal, Togo, Uganda and the United Republic of Tanzania.

³⁹ *Electronic Commerce: Legal considerations* (1998) p. 46.

⁴⁰ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 436.

⁴¹ Bell 1996, 8 Pace Int'l L. Rev. 237, *Sphere of Application of the Vienna Convention on Contracts for the International Sale of Goods*, p. 244.

⁴² Vilus, Jelena, *Uniform Law Review*, Vol. 8, Issue 1-2 (2003), pp. 163-172.

These countries suffer a lack of infrastructure, technology, skills, legislation, payment methods, financial resources and government interest in e-commerce issues.⁴³

In the article, it is emphasized that nations tend to adopt new rules for new activities rather than change their old and well-established legal practice. Furthermore, it contains information on the influence of technology on different legal fields - it does, apart from contract law, affect legal fields such as taxation, administrative law and customs.⁴⁴

A contract is valid even though it is concluded in an electronic way. Nonetheless, it is uncertain whether the arbitrations and courts will share this view. Written documents serve two purposes: they provide legal security and they ensure the validity of business transactions. In her opinion, international legislation is more successful than dealing with the issue of electronic commerce by way of party autonomy, i.e. voluntary agreements between the parties.⁴⁵

According to UNCITRAL, the key elements for successful electronic commerce are legal recognition of electronic data messages, admissibility of data messages in evidence, writing and electronic signatures.⁴⁶

In the concluding remarks, she presents the opinion that international organisations and developed countries should help developing countries on the route to a more widespread use of electronic commerce, which must be undertaken through acquisition of new technology in terms of both the know-how and the appliances. Furthermore, the unifications should cover also other areas than contract law.⁴⁷

3.2 Development of electronic transport documents

What is the reason for the development towards electronic transport documents? There are many potential benefits, such as lower costs, positive influence on the risk of fraud and corruption, and addressing the problem of goods arriving prior to the bill of lading.⁴⁸

First, we have to assess or try to find out the reasons for the extremely long time of paper documents handling in the world. We can think of several motives: it may be due to the permanency of the paper, or that a signature

⁴³ Ibid. at pp. 162-163.

⁴⁴ Ibid. at p. 163.

⁴⁵ Ibid. at p. 164.

⁴⁶ Ibid.

⁴⁷ Ibid. at p.169.

⁴⁸ Ibrahim 1999, *Electronic Bills of Lading, Implications and Benefits for Maritime Transport in Senegal*, p. 1.

made by a person's hand gives a more authentic impression than one made by a computer.

It could also concern other aspects, such as transfer of rights to be evidenced in tangible form and endorsement of delivery.⁴⁹

The paper documents comprise several functions that have to be conferred on their electronic counterparts. Paper...⁵⁰

- “1. is a carrier of information and instructions.
2. is a carrier of authentication symbols and device.
3. is a carrier of evidence.
4. is a carrier of legally significant symbols.
5. serves formal legal functions.”

In addition to the characteristics above, there may express requirements in an act stating that a document must contain specific phraseology or a particular content. Furthermore, contacts with national authorities have traditionally been in paper-form.⁵¹

A lot of aspects must be known by both contracting parties irrespective of if it is a written contract or an electronic one: contract formation, choice of law, enforceability of the agreement, the identities of the contracting parties and the question whether the contract can bind third parties.⁵²

At an UNCTAD symposium in 1994, the costs for customs procedures, including administration such as paper work but also delays, were estimated to add between seven and ten percent to the total cost of the goods imported. Because of this, there have been discussions since the early 1980s about how a replication of the bill of lading could be done in a new manner, which is the electronic one. The CMI initiated this work by elaborating rules that were supposed to be applicable to electronic bills of lading. The rules are called the CMI Rules for Electronic Bills of Lading.⁵³

What are the requirements to be met by electronic bills of lading? First, it must be accepted by a variety of parties involved in the industry: carriers, shippers, consignees, underwriters, banks and P & I Clubs. Secondly, it must be able to replicate the features of the conventional bill of lading. The first two functions, receipt and evidence of the contract of carriage can easily be fulfilled by an electronic equivalent, but it is more uncertain how the problem regarding the negotiability could be addressed.⁵⁴ It should be noted that documents of title are either negotiable or non-negotiable. In the case of security interests against the goods, only a possession of the

⁴⁹ Ibid.

⁵⁰ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 57.

⁵¹ Ibid.

⁵² Angel/Reed 2003, *Computer Law*, p. 334.

⁵³ Ibrahima 1999, pp. 1-2.

⁵⁴ Wilson 2008, *Carriage of Goods by Sea*, pp. 164-165.

document gives a full title to the goods. On the other hand, in the case of a document of title that is not negotiable, security interest perfection may only be achieved against the underlying goods by filing.⁵⁵

3.3 Open and closed networks

First, we have to assess the reasons for the extremely long time of paper documents handling in the world. There are a number of motives:⁵⁶

- Durability
- Portability
- Ability to be read in ordinary language
- Ability to provide a permanent record
- Ability to be authenticated by visible signature

There are also other aspects, such as transfer of rights to be evidenced in tangible form and endorsement of delivery.⁵⁷

The systems that will be presented in this section are deemed to be part of the e-commerce system. E-commerce is not only carried out by means of the Internet. Before the introduction of this global network, there were other electronic communications systems in use.⁵⁸

There exist two types of e-commerce: closed networks and open networks. EDI is an example of the former whereas the Internet is an example of the latter. An open network enables communication between parties without subscription to the same closed network⁵⁹ EDI is a technology for exchanging information. There is an important difference between EDI information and other electronic messages like fax messages in that the recipient can edit his EDI copy easily. EDI is appropriate when operations can be carried out automatically.⁶⁰

One thing that is important to note is the connections between a written document, the signature and the notion of an original. The latter refers to a proof that no alteration has been done. Furthermore, the EDI messages do not distinguish between a copy and an original.⁶¹ Moreover, Nova argues that the use of unique, non-transferable passwords will provide a higher standard of security compared to today's situation.⁶²

⁵⁵ Whitaker 1995, *Letters of Credit and Electronic Commerce*, p. 709.

⁵⁶ Nova 1999, *Electronic Data Interchange; Its benefits in trade activities for developing countries*, p. 15.

⁵⁷ Ibid.

⁵⁸ Angel/Reed 2003, *Computer Law*, p. 331.

⁵⁹ Ibid. at pp. 331-332.

⁶⁰ Ibid. at pp. 345-347.

⁶¹ Nova 1999, *Electronic Data Interchange; Its benefits in trade activities for developing countries*, pp. 21-22.

⁶² Ibid. at p. 22.

3.4 Challenges

There are several impediments concerning the introduction of electronic systems. Apparently, it seems like the major problems concern the legal part, not the technical one. The general view that a document of title has to be a paper and is only transferable if an original signature in handwriting has been made is a clear obstacle. The legislation is still not prepared to meet new standards, based on technology, on the market. Electronic data interchange, hereinafter “EDI”, which is described more thoroughly in the next part of this thesis, formed the basis of a legal framework which aimed at facilitating the use of electronic bills of lading. The problem is that it is part of contract law, which means that it is ruled out by statutory law. Furthermore, contractual provisions are only binding between the two parties that have agreed upon them; they do not apply to third parties.⁶³

The use of electronic bills of lading includes a number of legal issues and challenges to overcome:⁶⁴

1. A written document – is it a requirement that the document is written to be valid?
2. Signature – does it suffice to have an electronic signature?
3. Original – What does it mean that a bill of lading must be in original?
4. Evidential value of data messages
5. Storage of data messages
6. Documents of title and negotiability
7. Allocation of liability
8. Validity and formation of contracts
9. Incorporation of general terms and conditions
10. Other legal issues related to communication

A general definition of a digital signature is “an electronic substitute for a manual signature that serves the same functions as a manual signature and more. It is an identifier created by a computer instead of a pen”.⁶⁵ One can also define digital signature in a more technical way: “A digital signature is the sequence of bits of results from using a one-way hash function to create a message digest of an electronic communication. The resulting message is the encrypted using a public-key algorithm and the sender’s private key. A recipient who has the sender’s public key can accurately determine (1) whether the sequence of bits was created using the private key that corresponds to the signer’s public key, and (2) whether the communication has been altered since the sequence of bits was generated.”⁶⁶

One thing that distinguishes the digital signature from an ordinary handwritten one is that the digital ones are unique for every document

⁶³ Ibrahima 1999, *Electronic Bills of Lading, Implications and Benefits for Maritime Transport in Senegal*, pp. 2-3.

⁶⁴ *Electronic Commerce: Legal considerations* (1998) pp. 32-56.

⁶⁵ Smedinghoff 1996, *ONLINE LAW*, p. 43.

⁶⁶ *Ibid.* at pp. 43-44.

signed rather than unique to the signer and consistent (but not identical) across all documents signed by that person. Furthermore, a digital signature serves more purposes than a conventional one in that the previous comprises information-security functions. Both types of signatures give a sign of acknowledgement and authorship or assent. A digital signature evidences integrity, lacking in a manual signature. The former gives an assurance that the content in the message was not altered after the signature was made, which the manual one cannot provide.⁶⁷

There is one thing that is important to note about the digital signatures: they make sure that the requirements as to integrity and authenticity of the message are fulfilled, but they cannot themselves provide a guarantee as to the confidentiality of the document. That requires a separate cryptographic application. Furthermore, they do not give information on the point of time at which the signature was created. This is important to know if a contractual period starts at a certain time.⁶⁸

Electronic records are important for a number of reasons, one of which is the need for a proof in case of a dispute. Another reason is to show information in tax and regulatory situations. Employees come and go, but the records are preserved. Electronic recordkeeping serves four purposes:⁶⁹

- “1. All appropriate records shall be retained.
2. Ensure that records are available whenever needed.
3. Records should be trustworthy.
4. Document the electronic recordkeeping system.”

The legal impediments to paperless trade might, according to Emmanuel Laryea, be addressed in three ways:⁷⁰

- Legislation
- Private contracting
- Judicial adaptation of existing (general) laws to the new methods of transacting

Furthermore, he distinguishes between general and specific statutes to facilitate electronic transactions. The general statutes aim at removing medium specific languages or at adopting broad definitions in order to make transactions legal irrespective of the medium. “Electronic transactions act” is an example of this. Electronic evidence, electronic contracting and electronic authentication will all improve user trust and confidence.⁷¹

The specific statutes, on the other hand, deal with revising or enacting specific statutes. An example of revision is Carriage of goods by Sea Act 1991 and enactment Sea-Carriage Documents Act. The intention is in both cases to recognize paperless documents.⁷²

⁶⁷ Ibid. at p. 44.

⁶⁸ Ibid. at p.56.

⁶⁹ Ibid. at pp. 65-66.

⁷⁰ Laryea 2005, *International Review of Law, Computers and Technology*, p. 127.

⁷¹ Ibid.

⁷² Ibid.

3.5 Trustworthiness

In the previous chapter, it was mentioned that electronic records ought to be trustworthy in order to serve their purpose. First we have to look into the criteria for a secure transmission:⁷³

“- Two parties have been properly authenticated
- The information exchanged via the network remains unaltered. In spite of these two criteria there are three ways of obtaining confidential information:
a) Information copied during transmission
b) Information accessed during storage
c) Information can be obtained from an authorized party.”

Then how do parties evaluate one other parties' trustworthiness? The first process is the *calculative* one. These factors include, among others, the investments that have already been done, the parties' size and reputation and the length of the relationship. There are several others, but here we can mention the intentionality process and the transference process, in which the former refers to identification whereas the latter aims at third party trust.⁷⁴

3.6 The UNCITRAL Model Law on Electronic Commerce

3.6.1 Definition and principles

The organization UNCITRAL has launched a number of model laws, such as UNCITRAL Model law on Electronic Signatures (2001) and UNCITRAL Model law on Electronic Commerce (1996). This section will focus on the latter.⁷⁵

The UNCITRAL Model Law does not give a definition of the term "electronic commerce". Still, the term "EDI" is defined at the beginning of the Rules, as stated below. There are three purposes of the law:⁷⁶

1. Overcome the legal obstacles in paperless commerce.
2. Create a secure legal environment for electronic trade.
3. Target the use for individual parties to electronic commerce in the drafting process of contracts.

The UNCITRAL Model Law is based on a principle called *the functional equivalent approach*. This is about finding out the purposes and functions of the traditional, paper-based trade, and then assess how to reconstruct these purposes and functions in a non-tangible document processing, i.e. electronic

⁷³ Prins/Ribbers/Tilborg/Veth/van der Wees 2002, *Trust in Electronic Commerce*, p. 13.

⁷⁴ Ibid. at pp. 23-24

⁷⁵ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 114.

⁷⁶ Ibid. at p. 116.

trade. The reason for launching this principle was avoiding demands on adopting states to amend their legislations in order to adjust to the requirements put forward by the UNCITRAL Model Law as to electronic documents. Articles about paper-based trade were intended to remain. Thus, the intention was to keep the underlying legal concepts inherent in these provisions.⁷⁷

The objective is to highlight the obstacles that need to be addressed in order to implement the use of electronic documents. The UNCITRAL secretariat conducted investigations showing that issues regarding the evidential value of stored data messages in litigation constituted a problem that was less serious than the requirement concerning written documents and signatures.⁷⁸ This presentation will comprise the issues 1-4 highlighted in the list in Section 3.4.

Here are some relevant provisions from the code:⁷⁹

In article 2, the abbreviation “EDI” is introduced, and it means “the electronic transfer from computer to computer of information using an agreed standard to structure the information”.

Article 5 is also interesting, as it seeks to unblock the denial of legal effect, validity or enforceability only because a message is in data form.⁸⁰

The first attempt to harmonize EDI at an international level was the preparation of UNCID in 1987. It was evolved by a committee of the ICC in cooperation with a number of bodies such as UNCTAD, UNCITRAL and OECD. The rules that were created provided a legal framework for EDI communications. However, it was also agreed that there are other, unregulated aspects which must be considered by the parties and which are not covered by the Rules: issues about the allocation of risk, limitation of liability, the choice between rules on secrecy and rules of substance, rules on timing, signatures and encryption.⁸¹

It should be borne in mind that these Rules are contractually binding, and do not constitute mandatory law. Legislation would be the ultimate choice in order to make electronic transactions enforceable and valid.⁸²

3.6.2 Written document

A large number of jurisdictions impose the requirement of presenting written documents. There can be many reasons for requiring this: it may be a condition of validity, which entails that the contract is deemed null and

⁷⁷ Ibid. at pp. 116-118

⁷⁸ *Electronic Commerce: Legal considerations* (1998) p. 31.

⁷⁹ http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf (2010-03-11).

⁸⁰ Ibid.

⁸¹ *Electronic Commerce: Legal considerations* (1998), pp. 10-11.

⁸² Ibid. at p. 14.

void in the absence of a written document. If, contrary to this, it is required by law for evidentiary reasons to make the contract in written form to achieve validity, it is different. In this situation, a document that is not written will still be valid but its enforceability in case of litigation will be affected.⁸³

Part of a study published by the Commission of the European Communities showed cited as follows:⁸⁴

“The requirement of writing as a condition of validity of a legal transaction clearly represents an absolute a priori impediment to the development of EDI. Electronic data interchange cannot be used to accomplish legal transactions for as long as this remains a requirement.”

The issue of “writing” is found in article 6 of the Model Law, and it is clear that it does not aim at extending the definition of the term “writing” in order to make it comprise also electronic means of communication. For example, data messages as replacement for information in writing is only allowed if the information in the data message is available in order to be in use for subsequent reference. This is the content of the first paragraph. The second paragraph prescribes that this remains in force whether the requirement to do so is an obligation or if the law provides consequences for information that is not in writing.⁸⁵

The above approach is called the “functional equivalent approach”, which means that it prescribes the conditions that must be met by a data message to be regarded as equivalent to a paper-based device presented in “writing”, in a “document” or other paper-based instrument.⁸⁶

Apart from the function as evidence, in some jurisdictions and conventions, the transaction is also obliged to be concluded in written form. Provisions on signatures are often intended to envisage paper documentation.⁸⁷

In the past decades, a variety of international conventions that do not contain form requirements has been elaborated. An example of these is CISG from 1980. There, it says that “a contract of sale need not to be concluded in or evidenced by writing and is not subject to any other requirement as to form. It may be provided by any means including witnesses”. Conventions like the Multimodal Transport Convention and the Hamburg Rules have a different approach to this issue: they extend the definition of the word “writing” to include telegrams and telex.⁸⁸

⁸³ Ibid. at p. 32.

⁸⁴ “*The Legal Position of the Member States with respect to Electronic Data Interchange*”, p. 278.

⁸⁵ *Electronic Commerce: Legal considerations* (1998) p. 33

⁸⁶ Ibid.

⁸⁷ Ibrahim 1999, *Electronic Bills of Lading, Implications and Benefits for Maritime Transport in Senegal*, p. 17.

⁸⁸ Ibid.

When a jurisdiction does not define the terms “writing” or document”, it is presumed that the drafter appointed a written document, keeping in mind that it was the only format available at that time.⁸⁹

The purpose of article 6 is not that a data message should reflect all features that are inherent in a paper message. Rather, the objective is to focus on the information that is being reproduced and read. This information must be accessible, which means that the data ought to be readable and interpretable. Furthermore, it requires the use of the correct software.⁹⁰

3.6.3 Signature

Signature and other types of authentication are generally intended for associating a signatory or to prove that he is bound by the contents of the document. Manual signature is the most common manner of authentication. Some of the more recent conventions permit other forms, such as perforation, stamp, symbols or facsimile or other electronic or mechanical means, unless they are not consistent with the law of the country where the bill of lading is issued (the Hamburg Rules). The Convention on Liability of Operators of Transport Terminals has a different wording: “handwritten signature, its facsimile or an equivalent authentication effected by any other means”.⁹¹

The article 7 of the UNCITRAL Model Law addresses the issue of signatures: It states that in cases where the law requires the signature of a person, that requirement is fulfilled where an identification of that person and a confirmation of that person approving to the information contained therein can be made. A third requirement is that the method meets a standard of reliability that is sufficient for the purpose for which the message was communicated or generated. All circumstances and relevant agreements should hereby be taken into consideration.⁹²

The objective of article 7 is to confirm the identity of the author and to indicate his or her approval of the contents of the message. Article 7 (1) (b) does not set out a particular method of authentication. What is important is that the method is “reliable” and “appropriate”. In order to determine the latter factor one must consider all relevant circumstances of the case, including the legal, commercial and technical factors.⁹³ These factors are determined by the following aspects:⁹⁴

1. The sophistication of the equipment used by each of the parties
2. The nature of their trade activity

⁸⁹ Ibid.

⁹⁰ http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf (p. 36), (2010-04-25).

⁹¹ *Electronic Commerce: Legal considerations* (1998) p. 35.

⁹² Ibid. at p. 36.

⁹³ Ibid. at pp. 36-37.

⁹⁴ http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf (p. 39) (2010-04-25).

3. The frequency at which commercial transactions take place between the parties
4. The kind and size of the transaction
5. The function of signature requirements in a given statutory and regulatory environment
6. The capability of communication systems
7. Compliance with authentication procedures set forth by intermediaries
8. The range of authentication procedures made available by any intermediary
9. Compliance with trade customs and practice
10. The existence of insurance coverage mechanisms against unauthorized messages
11. The importance and the value of the information contained in the data message
12. The availability of the alternative methods of identification and the cost of implementation
13. The degree of acceptance or non-acceptance of the method of identification in the relevant industry or field both at the time the method was agreed upon and at the time when the data message was communicated.
14. Any other relevant factor

3.6.4 Original

The concepts of “writing”, “signature” and “original” are closely related, which entails that the requirements are often a written, signed, original paper document. The very idea of demanding an original document is to guarantee that the information has not been altered and to ensure the integrity and authenticity of the document. In the case of paper-based bills of lading, the rights are associated with the physical possession of that document.⁹⁵

In the field of e-commerce, a distinction between an original and a copy is definitely an artificial one. There are nowadays techniques for confirming the integrity and authenticity of a data message.⁹⁶

In order to supersede the uncertainties derived from the requirement for an original under national laws, the UNCITRAL Model Law deals with this subject in article 8. This article stresses the importance of *integrity*. The parties must be assured that the message has not been altered, once it has been brought in its final form. The other factor is the capability of displaying the message. One must be able to display the message the person to whom it is intended to be presented.⁹⁷

⁹⁵ *Electronic Commerce: Legal considerations* (1998), p. 39.

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*

The above provision sets out minimum acceptable form requirements to be fulfilled by a data message in order to be functional equivalent of an original.⁹⁸

According to the UNCITRAL guide to enactment, the provision emphasizes the need for authentication in order to obtain “originality”, and the criterion for this is “integrity”.⁹⁹

3.6.5 Negotiability

At the beginning of this thesis, a brief overview of the conventional, tangible bill of lading has been brought (*supra* 2.3.3). Transmitting the document of title feature to electronic documents is the most difficult of all the aforementioned challenges.

A wide array of problems need to be resolved if the goal is to achieve negotiability in electronic commerce. Besides the above aspects such as writing and signature, the allocation of liabilities, confidentiality, incorporation of general terms and conditions of contract need to be addressed.¹⁰⁰ The UNCITRAL Model Law points out that, when using data messages instead of paper documents, it is important to ensure that the obligations or rights are transferred to one person only. This is expressed in article 17 (3). In this provision, the *uniqueness* of the message is emphasized. A message has to be unique regardless of whether it is presented electronically or in a paper-based, tangible form. However, it is also prescribed in the article that it does not need to be one single message, in which the obligation or right is conveyed. The presupposition of all this is that the obligation is to be conveyed to *one* specific person. In the law, this is expressed in the following way:¹⁰¹

“If a right is to be granted, or an obligation is to be acquired by, one person and no other person, and if the law requires that, in order to effect this, the right or obligation must be conveyed to that person by the transfer, or use of, a paper document, that requirement is met if the right or obligation is conveyed by using one or more data messages, provided that a reliable method is used to render such data message or messages unique.”

There are also provisions aiming at avoiding duplication by unabling the use of paper documents and data messages simultaneously. This means that no paper document will become valid until the data message has been terminated.¹⁰²

⁹⁸ Ibid. and (http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf) (2010-04-25) p. 41.

⁹⁹ Ibid. at p. 42.

¹⁰⁰ Ibid. at p. 47 and *UNCITRAL report A/CN.9/WG.IV/WP.69*.

¹⁰¹ *Electronic Commerce: Legal considerations (1998)*, p. 49.

¹⁰² Ibid.

3.7 Securing rights

This section is about secured transactions law, which is an essential part of the implementation of electronic bills of lading.

These are the ways of securing one's rights to a title of ownership, a monetary obligation or other rights:¹⁰³

- "Possession of the object." This is convenient for moveable goods and is the basic way of securing one's rights.
- "Possession of a symbol representing the object or the right." The document can be regarded as moveable goods if there are rules prescribing that possession over the document gives title to the object or the right.
- "Notification to the debtor or the possessor of the goods."
- "Registration in a registry."

There is a trend today of introducing systems based on registration or notification rather than systems based on possession. Notification has become easy because of modern telecommunication.¹⁰⁴

3.8 Electronic records in different jurisdictions

3.8.1 The Swedish Maritime Code

The Swedish Maritime Code (1994:1009) implicitly refers to electronic bills of lading in the definition section. It is written that transport documents are bills of lading or other documents that constitute evidence of the contract of carriage.¹⁰⁵

Also, article 46 in Chapter 13 of the Swedish Maritime Code enables the use of electronic records as to the signature. It requires that the bill of lading be signed by the carrier. Alternatively it may be signed by a person acting on the carrier's behalf. Furthermore, the provision gives several possibilities as to the means of signing the bill of lading – this can be done either in a mechanical way or electronically.¹⁰⁶

3.8.2 The CMI Rules for Electronic Bills of Lading

The Rules were adopted in 1990. One objective of the Rules is to preserve the negotiability (a key feature of bills of lading). This is achieved by providing the shipper with a type of password, a "private key", which will guarantee the authenticity and integrity of the transmission. The holder of

¹⁰³ Torvund, Olav (1995) <http://www.torvund.net/artikler/jubiri.asp> (2010-04-24).

¹⁰⁴ Ibid.

¹⁰⁵ *The Swedish Maritime Code*, 13:1.

¹⁰⁶ Ibid. 13:13.

the key is the only party that is entitled to claim delivery of the goods. Other rights are to nominate a receiver or to substitute an already chosen receiver.¹⁰⁷

Article 8 about the private key deals with the transfer of title. This is unique to every successive holder and it is not possible to transfer it. Both the holder and the carrier obtains the security of the private key. A confirmation is then sent by the carrier to the last holder of the private key. The transmission is secured by the private key. The private key is separated and different from any means used to identify the contract of carriage and any password for accessing the computer network.¹⁰⁸

An important aspect of the CMI Rules is that they do not have the force of law. Their application is dependent on an active choice by the parties and they do not supersede other regulations that are applicable at the same time, such as the Hague-Visby Rules. This is written in article 6, referring to jurisdiction. It states that a contract of carriage that is governed by a domestic law or an international convention in case of the use of a paper bill of lading, shall be governed by the same sets of rules if an electronic document has been produced.¹⁰⁹

3.8.3 The Rotterdam Rules

The Rotterdam Rules were opened for signature on September the 23th of 2009.¹¹⁰ 21 countries, including 8 European countries signed the Convention in September that year.¹¹¹ In the following paragraphs, a description of some relevant provisions with regard to electronic documents is outlined.

Article 8 prescribes two things: first, that any transport document under the Rotterdam Rules can be recorded electronically. In addition to this, transfer, exclusive control or issuance of an electronic transport record has the same effect as their counterparts with regard to a record that consists of a physical document.¹¹²

Article 9 governs the procedures for the use of these electronic records. It provides that the negotiable electronic transport record preserves its integrity and regulates the way in which it is demonstrated who is the holder, as well as the procedure concerning the issuance and the transfer of that record to the rightful holder.¹¹³

¹⁰⁷ *Electronic Commerce: Legal considerations* (1998), p. 15.

¹⁰⁸ <http://www.comitemaritime.org/cmids/rulesebla.html> (2010-03-29).

¹⁰⁹ Ibid.

¹¹⁰ <http://www.rotterdamrules2009.com/cms/index.php> (2010-04-25).

¹¹¹ http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-D-8&chapter=11&lang=en (2010-04-25).

¹¹² <http://davismarine.com/articles/Rotterdam%20Rules%20with%20Index.pdf> (2010-03-11).

¹¹³ Ibid.

In article 10, it is laid down how a replacement of a traditional, negotiable transport record could be done. In this case, the holder shall surrender the negotiable document to the carrier and the carrier shall then issue an electronic bill of lading that is also negotiable. A notice about the replacement shall be given. After this procedure, the paper document does not have any validity or effect. It should also be noted that a transfer the other way around, i.e. from an electronic record to a paper record, is possible according to this article.¹¹⁴

In the next article, we will have a look at the transfer of negotiable bills of lading.¹¹⁵

“Article 57 – When a negotiable transport document or electronic transport record is issued

1. When a negotiable transport document is issued, the holder may transfer the rights incorporated in the document by transferring it to another person:

(a) Duly endorsed either to such other person or in blank, if an order document; or

Without endorsement, if:

(i) a bearer document or a blank endorsed document; or

(ii) a document made out to the order of a named person and the transfer is between the first holder and the named person.”

The next paragraph of the article deals with the transfer of the rights attached to the electronic bill of lading.¹¹⁶

“2. When a negotiable electronic transport record is issued, its holder may transfer the rights incorporated in it, whether it be made out to order or to the order of a named person, by transferring the electronic transport record in accordance with the procedures referred to in article 9, paragraph 1.”

In this section, parts of the travaux préparatoires will be highlighted:¹¹⁷

In the CMI conference in Singapore 11-17 February of 2001, there was a consensus that a new instrument must recognize and facilitate the use of electronic commerce. Furthermore it was held that provisions in this field must be simple and technology-neutral. Moreover, the 1990 CMI Rules on Electronic Bills of Lading should be taken into consideration when designating the provisions of the new convention.¹¹⁸

There are definitions in the convention text that would need some clarification:¹¹⁹

¹¹⁴ Ibid.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ <http://www.comitemaritime.org/draft/travaux.html>, (2010-05-07).

¹¹⁸ <http://www.comitemaritime.org/singapore2/conference37/issue/issues1.html>, (2010-05-07).

¹¹⁹ http://www.comitemaritime.org/singapore/issue/issue_eco_rep.html, (2010-05-10).

“Negotiable transport document” – “a transport document such as a bill of lading, that states that the goods are to be delivered to order, to bearer, or to order of any person named in the document, and is not prominently marked “nonnegotiable” or “not negotiable”.

“In writing” – “includes, unless otherwise agreed between the parties concerned, information generated, sent, received or stored by electronic, optical or similar means of communication, including but not limited to, telegram, facsimile, telex, electronic mail or electronic data interchange (EDI) provided the information contained therein is accessible so as to be usable for subsequent reference.”

3.8.4 The Hague-Visby Rules

The Hague-Visby Rules, 1968:

Article III:¹²⁰

“After receiving the goods into his charge, the carrier, or the master or agent of the carrier, shall, on demand of the shipper, issue to the shipper a bill of lading showing among other things...”

Article IV:¹²¹

“Such a bill of lading shall be prima facie evidence of the receipt by the carrier of the goods as therein described in accordance with paragraphs 3(a), (b) and (c).”

When looking into the travaux préparatoires of the Hague Rules (the conventions is from 1924 and the travaux préparatoires from 1922) and the Hague Visby Rules, there is a clarification of the term “prima facie evidence”, which is the article 3(4) *para 1* of the Hague Rules as well as the above article of the Hague Visby Rules. The Chairman of the conference explained what *prima facie* means: The descriptive notes remain conclusive evidence unless the shipowner proved there was an error.¹²² The Swedish delegate Mr Bagge agreed with the chairman, adding that he was averse to the French wording “présomption sauf épreuve contraire”¹²³ as to the conclusiveness of the bill of lading. The reason for his reluctance was that the bill of lading is a conclusive proof of the contract of carriage in Scandinavian law, whereas the draft only considered the bill of lading as a prima facie evidence.¹²⁴ According to the German delegate Mr Rambke the bill of lading constitutes an incontestable proof and he claimed to not being prone to recommending to his Government a convention that would set aside that principle.¹²⁵

¹²⁰ <http://www.admiraltylaw.com/statutes/hague.html>, (2010-03-29).

¹²¹ Ibid.

¹²² *The Travaux Préparatoires of the Hague Rules and of the Hague Visby Rules*, p. 231.

¹²³ In English, approximately: “presumption if the contrary has not been proven” (no translation in the book)

¹²⁴ *The Travaux Préparatoires of the Hague Rules and of the Hague Visby Rules*, p. 231.

¹²⁵ Ibid.

3.8.5 The Hamburg Rules

The Hamburg Rules, 1978:¹²⁶

PART IV. TRANSPORT DOCUMENTS

Article 14. Issue of bill of lading

“1. When the carrier or the actual carrier takes the goods in his charge, the carrier must, on demand of the shipper, issue to the shipper a bill of lading.
2. The bill of lading may be signed by a person having authority from the carrier. A bill of lading signed by the master of the ship carrying the goods is deemed to have been signed on behalf of the carrier.”

Paragraph 3 deals with the methods of signing the bill of lading:¹²⁷

“3. The signature on the bill of lading may be in handwriting, printed in facsimile, perforated, stamped, in symbols, or made by any other mechanical or electronic means, if not inconsistent with the law of the country where the bill of lading is issued.”

3.9 Current e-commerce systems

3.9.1 Systems for electronic documents and payment

In this section, electronic document handling and payment systems are presented. Bolero, @GlobalTrade, TradeCard and SEADOCS are important and well-known examples in this business, which make them appropriate for giving examples. In summary, TradeCard and @GlobalTrade provide financing of commercial transactions, unlike the Bolero system. Another important difference is that Bolero and SEADOCS use negotiable bills of lading, whereas the other systems utilize non-negotiable receipts.¹²⁸ Another similarity between the latter systems is the fact that they are based on a central registry, resulting in problems of confidentiality and liability.¹²⁹

Marek Dubovec holds that the reason these systems never became successful was the problem concerning the replication of the negotiability function inherent in the conventional paper-based bill of lading. In addition to this, he mentions that it is important to deal with the collateral security aspects of paper documents. Moreover, any forms of electronic bills of lading require a registry that serves as a reliable middleman.¹³⁰

¹²⁶ <http://www.admiraltylawguide.com/conven/hamburgrules1978.html>, (2010-03-29).

¹²⁷ Ibid.

¹²⁸ Dubovec 2006, *Arizona Journal of International & Comparative Law*, p. 457.

¹²⁹ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 401.

¹³⁰ Dubovec 2006, *Arizona Journal of International & Comparative Law*, p. 457.

3.9.2 Registries

Under the systems in this section, rights in physical goods are transferred through the mechanism of registration instead of the possession of a tangible document of title (*supra* 3.4). There are three types of registries:¹³¹

1. Government registries
2. Central registries
3. Private registries

There are advantages and drawbacks with each one. Central registries, for example, are more secure than private registries. On the other hand, a central registry is more expensive than the other two and also more inflexible. It requires its members to form a group. Documentary credits are in this case appropriate in particular if the trading parties have little confidence in each other. Government systems are mostly used for transferring ownership and mortgaging real estate.¹³²

3.9.3 Bolero

Bolero was created in 1998 by SWIFT and TT Club.¹³³ There also existed an earlier version, a pilot project financed by the European Union. The following year, 120 participants made a series of tests about handling documents in non-paper form, concerning insurance certificates, letters of credits and bills of lading. The evaluation showed that the document management processing periods were, on average, shortened from nearly two weeks to half a day.¹³⁴

In 1997-1999 an interesting study on the difficulties, effects and evolvement of Bolero was carried out. Eighteen significant or for some reason representative jurisdictions were selected. A number of issues were investigated; firstly *writing requirements in contracting*, secondly *electronic evidence*, thirdly *how to effect the transfer of insurance cover, the transfer of contract of carriage and the transfer of goods by electronic means*. The study showed a lot of things: as to the first problem the findings gave rise to a general comment that writing requirements exist in some contracts of carriage acts as well as in those relating to contracts of sale. The same goes for insurance policies. With regard to promissory notes and bills of exchange, they have to be in writing without exception. In addition to this, there was a slight development towards allowing electronic documents as evidence. There were particular problems concerning bankruptcy; the concepts *possession* and *title* are distinguished in most jurisdictions. Another important issue is that of securities and pledges. It is uncertain whether security interests in respect of a specific consignment can be defended in the same way by means of electronic records, but in all the

¹³¹ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, pp. 441-442.

¹³² *Ibid.* at pp. 441-443.

¹³³ Dubovec 2006, *Arizona Journal of International & Comparative Law*, pp. 7-8.

¹³⁴ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 401.

states it would be possible to complete a pledge of particular cargoes electronically. Such registrations would not be made in a public registry under either English or US law. Some jurisdictions may require a written form for the acknowledgement by the carrier to the bank.¹³⁵

Bolero has a two-company structure supported by membership and contractual arrangements. The system contains something that is called The Rulebook, which is a multilateral contract providing service to its members. Bolero is based on two techniques: there is EDI and digital signatures, and separate XML standards respectively.¹³⁶

Another part of the Bolero system is the title registry, which enables the parties to transfer property rights when the cargo is in transit. Therefore, it is an example of dematerialisation of property rights.¹³⁷

Bolero is an example of a closed network (closed circuit), both technically and legally. It has been criticized for this, because of its private law-making character.¹³⁸ It consists of a number of binary data, stored in a database, and provides for communication between physical or legal persons through a server. Kristina Maria Siig, research fellow of the Scandinavian Institute of Maritime Law in Oslo in 2001, regards Bolero as a system that is more successful than other e-commerce systems such as SEADOCS.¹³⁹ Marec Dubovec represents another view: it was never successful due to its failure to gain support from the banking industry.¹⁴⁰

The CMI Rules for Electronic Bills of Lading of 1990 were put forward to be applicable to Bolero.¹⁴¹

There are two websites with information about Bolero.¹⁴² The Bolero Financial Supply Chain Solutions consist of The Bolero Trusted Trade Platform, The Bolero Open Account Suite and The Bolero Documentary Credit Suite.¹⁴³ The members actions are governed by a service contract, which is an agreement between the users and BOLERO ASSOCIATION LIMITED. For example, disciplinary procedures are possible.¹⁴⁴

3.9.4 @GlobalTrade

The documents under this system were non-negotiable sea waybills, which were subject to the CMI Rules for electronic bills of lading. It was a flexible

¹³⁵ Ibid. at pp. 404-406.

¹³⁶ Ibid. at p. 402.

¹³⁷ Ibid.

¹³⁸ Siig, 2001, *marius*, p. 7.

¹³⁹ Ibid. at p. 2.

¹⁴⁰ Dubovec 2006, *Arizona Journal of International and Comparative Law*, p. 7.

¹⁴¹ Siig 2001, *marius*, p. 2.

¹⁴² www.bolero.net and www.boleroassociation.org

¹⁴³ http://www.bolero.net/solutions/supply_chain.html (2010-05-10).

¹⁴⁴ http://www.boleroassociation.org/downloads/bal_sc.pdf (2010-05-10).

system which allowed export letters of credit. UCP 500 and the eUCP were incorporated.¹⁴⁵

The company's webpage provides information stating that it "improves the world of trade finance and trade services" and that it reduces risk and improves monitoring and control.¹⁴⁶ There are lots of services, including standby LC, export documentary credit, export documentary collection, import documentary collection and open account financing.¹⁴⁷

@GlobalTrade applies to the new eUCP, which is presented in Section 5.3. According to the homepage, the company provides answers to the following primary issues:¹⁴⁸

- How to provide for a secure electronic address to accommodate eUCP definition for a place of presentation?
- How would my customers sign electronic records?
- How to combine electronic records and paper documents in one presentation?
- If the electronic record presented cannot be authenticated what are the bank's potential liabilities? How to find a practical solution for this that would not frustrate clients and would increase the volume of business?

There is also information about the company's effort to enhance security, confidentiality and reliability of communications by means of a direct encrypted Internet connection.¹⁴⁹

The infrastructure of @GlobalTrade is the Documentary Clearance System (DCC). It involves a centralization of all sorts of trade, transport, insurance and financial documents.¹⁵⁰

3.9.5 TradeCard

This e-commerce system was established in 1994 by the World Trade Centers Association.¹⁵¹ The system is internet-based and is characterized by digital signatures for making purchase orders.¹⁵² The purchase order is made by the buyer, and the seller is subsequently notified by TradeCard. A characteristic feature of TradeCard is that it is associated with INCOTERMS in the sense that the company offers insurance coverage in accordance with these terms.¹⁵³

¹⁴⁵ Dubovec 2006, *Arizona Journal of International and Comparative Law*, pp. 454-455.

¹⁴⁶ http://www.globaltradecorp.com/gtc_com_profile.htm (2010-05-10).

¹⁴⁷ Dubovec 2006, *Arizona Journal of International and Comparative Law*, pp. 454-455.

¹⁴⁸ http://www.globaltradecorp.com/gtc_prod_consulting.htm (2010-05-10).

¹⁴⁹ http://www.globaltradecorp.com/gtc_prod_ucon.htm

¹⁵⁰ Dubovec 2006, *Arizona Journal of International and Comparative Law*, pp. 454-455.

¹⁵¹ *Ibid* at p. 9.

¹⁵² *Ibid*.

¹⁵³ Dubovec 2006, *Arizona Journal of International and Comparative Law*, p. 456.

The technological platform of TradeCard can be viewed on its webpage:¹⁵⁴
“TradeCard connects all trading partners on one network. Not point-to-point, like other solutions, but many-to-many. Buyers, suppliers, shipping companies, raw material providers, financial institutions, inspection companies, anyone that adds value to the transaction, are connected.”¹⁵⁵

According to Marek Dubovec, TradeCard is the most successful of all electronic bill of lading systems in attracting carriers, banks and traders.¹⁵⁶ TradeCard offers a range of services, such as insurance coverage, payment and contracting for goods.¹⁵⁷

3.9.6 SEADOCS

SEADOCS was the first system for administering electronic bills of lading. It consists of a central registry, and the communication between the trade parties is undertaken through the Chase Manhattan Bank. It is not a completely automated system, since the bank communicates with users by telex after having received the original bill of lading. SEADOCS failed for practical reasons, not because of legal problems:¹⁵⁸

1. Traders were reluctant to recording their transactions in a central registry, since it entailed that tax authorities and competitors could do inspections.
2. The last buyer of the goods resisted acquiring bills of lading from the registry.
3. Banks disliked the fact that one of their competitors had exclusive access to the registry..
4. Insurance of the registry operations was rather expensive since liability of participants was not established.
5. There were no provisions on the transfer of contractual rights and liabilities to transferees of the bill, besides the original shipper.

¹⁵⁴ <http://www.tradecard.com/platform/index.html> (2010-05-10).

¹⁵⁵ Ibid.

¹⁵⁶ Dubovec 2006, *Arizona Journal of International and Comparative Law*, p. 458.

¹⁵⁷ Ibid.

¹⁵⁸ Ibid, at pp. 449-450.

4 Double sale

4.1 General information

In this section we will have a look at double sale, which is about selling a bill of lading to several buyers. The reason for bringing in double sale into the thesis is that it is appropriate to compare conventional bills of lading with electronic ones on the basis of this aspect in the analysis, even in the absence of case law illustrating the said comparison.

Double sale is a sort of bill of lading fraud and is constituted by a sale by the exporter to two or more importers. Double sale can also be used for crime by the buyer.¹⁵⁹

A bank will, in a documentary credit transaction, require a full set of originals before paying the purchase price. If the seller forges an entire set of bills of lading a fraud may succeed, and then the same amount of cargo can be sold to several importers. One should be aware of the fact that this procedure does not protect the importers presenting the genuine bills of lading at the bank and forges the set of bills of lading, shipping the cargo in accordance with the contract. This includes selling the forged bills of lading to another importer, including a similar negotiation of the documents to another bank. Two or more buyers will demand ownership of the goods. The defence of forgery is considered a permanent defence.¹⁶⁰

In the case a buyer has undertaken a double sale, it works out like this: He can forge the bill of lading copy he receives by mail from the seller, or make two forged bills of lading. One of them is sold to a third party against cash. The importer will then receive purchase money for the forged bill of lading and cargo without having paid anything for it.¹⁶¹

There are also other possible situations, for example cargo delivery without simultaneous bill of lading presentation. In this case the carrier will often provide a bank guarantee. However, problems may arise in case of a later refusal to pay. This can depend on a discovery of defects in the goods or even that the buyer had no intention to pay for the goods at all. In the latter case, the bank guarantee was a forgery. After delivery by the carrier, the seller disappears.¹⁶²

The seller is the victim and the carrier cannot raise any defence. Furthermore, limitation of liability is not possible and there will be no insurance cover. The seller will turn to the carrier and claim compensation

¹⁵⁹ Holmberg 1985, *Bills of Lading Fraud*, p. 47.

¹⁶⁰ Ibid. at pp. 47-48.

¹⁶¹ Ibid. at p. 49.

¹⁶² Ibid. at pp. 49-50.

for the loss of the purchase sum. The one year limitation period in the Hague rules is considered not applicable. Case law and writers point in this direction, but there is no statutory law expressly prescribing this.¹⁶³

4.2 Chapter 13 in the Swedish Maritime Code

4.1.1 Section 52 (303)

The first paragraph of the article is about how one can become authorized to receive the goods:

“The person presenting a bill of lading and appearing, through its content or, in the case of an order bill, through a continuous chain of endorsements or through an endorsement in blank as the rightful holder in due course, is authorised to take of the goods.”¹⁶⁴

The second part of the article provides the number of bills of lading necessary to be presented at the port if several bills of lading have been issued:

“If the bill of lading has been issued in several originals, it suffices for due delivery at the port of destination that the consignee demonstrates his authority by presenting one original of the bill of lading. If the goods are delivered at any other port, any other originals must also be surrendered or security be lodged for any claim that a holder of any other original in circulation might raise against the carrier.”¹⁶⁵

4.1.2 Section 56 (306)

In this part, the order in which persons become entitled to receive the goods is prescribed:

“If a holder of a bill of lading negotiates bill of lading originals to several persons, the person who first receives such an original in good faith is entitled to the goods. If, at the port of destination, the goods have been delivered to the holder of any other original, that person is not obliged to relinquish what he has already received in good faith.”¹⁶⁶

The second paragraph deals with special types of bills of lading:

“The person who has acquired an order or bearer bill of lading in good faith is not obliged to deliver the bill of lading to the person who has lost it.”¹⁶⁷

¹⁶³ Ibid. at p. 50.

¹⁶⁴ Schelin 2006, *The Swedish Maritime Code*, p. 123.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid. at p. 125.

¹⁶⁷ Ibid.

5 eUCP and Documentary Credits

5.1 Introduction

In this chapter, the current payment systems will be discussed. Even though the thesis focuses on the aspects of written documents, the signature, the concept of original and the negotiability, one should not exclude the means of payment from the analysis. This is simply because the same features are present in the articles of various payment rules, such as UCP. The inclusion of eUCP, which could be called an edition for electronic means of payment, contrary to its former (and still ongoing) edition UCP, represents a transition from paper-based trade towards an intangible, computer-based one. First, we will have a look at the traditional concepts regarding payment.

There are different ways of conducting payments in international business today, and they are divided in the following way:

1. Documentary payment methods
 - Documentary credits (letters of credits)
 - Documentary collections
2. Open account trading (for example bank guarantee)

The first one aims at providing security for the seller, but on the other hand it is more expensive. Moreover, it serves as a guarantee for credit-worthiness. The trend today is a decreasing use of documentary payment methods, and historically documentary credits have been used more frequently in periods of economic instability.¹⁶⁸

There is also another trend, which is towards automation of reimbursements. First, we have to be aware of the purposes of any payment, albeit by means of a documentary credit or a documentary collection. The purpose is to fulfil two criteria: provide security and make a payment. Furthermore, a documentary credit is a political instrument since a state can control demand and supply by the use. The outcome of automation is ideally a secure (regarding forgery) and cheap way of obtaining transaction-related trade business security. At the same time, it should protect the banker as the middleman, the buyer and the seller. This could be favourable especially to smaller and middle-sized companies in international trade. Today, the documentary credits are checked by human beings, and the checking procedure is expensive and complicated.¹⁶⁹

There is a vast harmonisation of rules in the field of documentary credits, but this has primarily been made by the private sector, by the banks and in

¹⁶⁸ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, pp. 294-295.

¹⁶⁹ Ibid.

cooperation with the ICC. The first set of rules was adopted in 1933, and was acknowledged by and in use in seven European countries including France and Germany.¹⁷⁰ In the next section, we will take a look at a later edition of the Rules, called UCP500 (produced in 1993), which succeeded UCP400 from 1983.¹⁷¹

The aim of this chapter is to look at major provisions in the most used regulations in the financial sector. This is important since it can give an indication of whether the rules of the codes below are harmonized with the rules governing the use of electronic bills of lading.

5.2 UCP 600 and former editions

These provisions represent an international standard for documentary credits, created in 2006 and in use since 2007. It is used worldwide and binding on both parties involved in the transaction, provided that it is prescribed on the credit that these rules apply.¹⁷²

Earlier versions of the systems were UCP 400 and UCP 500. The alterations that were made were, among others, that the UCP 500 indicated that teletransmissions must be “authenticated” to be effective. The reason for using “authenticated” instead of “signed” is to create flexibility. UCP 500 does not regulate the form of the letter of credit, which indicates that other laws may regulate this.¹⁷³

UCP 500 did not define the word “document”, but it stated that documents may be “produced” in computerized manners, as long as they are marked “original” and “signed”. “Signed” refers to mechanical and electronic authentication, but it is also possible, since it is required that a “document” be “produced” and “marked as “original” that UCP 500 still referred to a paper document, which nonetheless can be produced by means of a computer with a “signature” made by an authenticating set of symbols.¹⁷⁴

According to the author of the article, David Whitaker, one benefit of the UCP 500 was the fact it provided a reduction of the responsibility for the banks, because of the non-responsibility for loss of transmissions or transmission errors.¹⁷⁵

¹⁷⁰ Ibid. at p. 303-304.

¹⁷¹ Ibid.

¹⁷² *ICC Uniform Customs and Practice for Documentary Credits*, article 1, p. 116.

¹⁷³ Whitaker, David, R, *Letters of Credit and Electronic Commerce*, p. 706.

¹⁷⁴ Ibid. at p. 707.

¹⁷⁵ Ibid.

5.3 eUCP

The code eUCP is a supplement to the UCP 600, and was launched in order to address electronic equivalents to paper documents. The use of eUCP enables a presentation of only electronic records or a mixture of paper documents and electronic records.¹⁷⁶

The official name of the Code is “Supplement to the Uniform Customs and Practice for Documentary Credits for Electronic Presentation (Version 1.1). eUCP Version 1.1 is adjusted specifically to UCP 600 and is prepared for revision in case of any changes, for example technological ones. Nonetheless, one of the purposes of the eUCP publication is to be independent of specific technologies and electronic commerce systems under construction.¹⁷⁷

Here are some relevant provisions in the code:¹⁷⁸

ARTICLE e2¹⁷⁹

RELATIONSHIP OF THE eUCP TO THE UCP

“a. A credit subject to the eUCP (“eUCP credit”) is also subject to the UCP without express incorporation of the UCP.

b. Where the eUCP applies, its provisions shall prevail to the extent that they would produce a result different from the application of the UCP.

c. If an eUCP credit allows the beneficiary to choose between presentation of paper documents or electronic records and it chooses to present only paper documents, the UCP alone shall apply to that presentation. If only paper documents are permitted under an eUCP credit, the UCP alone shall apply.”

It is important to look into the definitions:¹⁸⁰

ARTICLE e3

DEFINITIONS

“b.

i “*electronic record*” means:

- data created, generated, sent, communicated, received or stored by electronic means

- that is capable of being authenticated as to the apparent identity of a sender and the apparent source of the data contained in it, and as to whether it has remained complete and unaltered, and

- is capable of being examined for compliance with the terms and conditions of the eUCP credit.”

¹⁷⁶ ICC *Uniform Customs and Practice for Documentary Credits*, p. 89.

¹⁷⁷ Ibid.

¹⁷⁸ Ibid. at pp. 93-97.

¹⁷⁹ Ibid. at p. 93.

¹⁸⁰ Ibid. at p.94.

There is a provision on electronic signatures also in this Code, and its purpose is authenticating the rightful person.¹⁸¹

“ii. “*electronic signature*” means a data process attached to or logically associated with an electronic record and executed or adopted by a person in order to identify that person and to indicate that person's authentication of the electronic record.”

“iii. “*format*” means the data organization in which the electronic record is expressed or to which it refers.”

“iv. “*paper document*” means a document in a traditional form.”

“v. “*received*” – means the time when an electronic record enters the information system of the applicable recipient in a form capable of being accepted by that system. Any acknowledgement of receipt does not imply acceptance or refusal of the electronic record under an eUCP credit.”

As we can see below, even electronic records need a specified place for presentation:

ARTICLE e5¹⁸² PRESENTATION

“a. An eUCP credit allowing presentation of:

- i. electronic records must state a place for presentation of the electronic records
- ii. both electronic records and paper documents must also state a place for presentation of the paper documents.

b. Electronic records may be presented separately and need not be presented at the same time.”

(c-f exist also)

Here is an article about replicating an eUCP credit:

ARTICLE e8¹⁸³ ORIGINALS AND COPIES

“Any requirement of the UCP or an eUCP credit for presentation of one or more originals or copies of an electronic record is satisfied by the presentation of one electronic record.”

Article 11 about corruption after presentation was created because of the risk of receiving an electronic record containing a virus or receiving a record that is affected in other ways, causing a damage that makes it corrupted.¹⁸⁴

¹⁸¹ Ibid.

¹⁸² Ibid. at p. 95.

¹⁸³ Ibid. at p. 98.

6 Analysis

6.1 General remarks

In this part, a discussion about the eventual drawbacks of the electronic bills of lading will be presented. It is highly plausible that there exist problems of some kind. There are advantages and disadvantages with both paper-based bills of lading and electronic ones. This chapter will refer to factors outlined in Chapter 3, one by one. As a general comment, it seems like one key factor is that private contracting needs to be gradually replaced by legislation if the development is supposed to go faster. Nevertheless, international law is only binding on the parties who have signed the conventions, which will constitute an impediment even in a long-term perspective. Another problem is the fact that the shipping companies act on a global market, whereas the legislation of a country is restricted to that area. The companies may trade in all continents, which is the reason why more international mandatory regulations are necessary, provided that we make the assumption that electronic bills of lading are desirable in the market. It is important to realize that there must be an overall picture: the documents, the payment and so on. Today, the conditions as to the latter are mostly regulated contractually by SWIFT and with banks in cooperation. It does not suffice to focus on making the CMI Rules or the UNCITRAL Model Law mandatory, and this would not even be possible since these are rules within the framework of international law.

6.2 Written document

The wording “or other document” in 13:1 of the Swedish Maritime Code could refer to an electronic document.

Regarding the issue of writing, it should be held that both the eUCP and the Rotterdam Rules recognize the “functional equivalent approach”. Their provisions fulfil the requirements in the article 6 of the UNCITRAL Model Law on Electronic Commerce.

As to the trend of notification and registration as means of securing rights described in part 3.7, it should be noted that it seems to be no problems as long as the information is stored in a secure way. A quotation from section 3.9.6 about SEADOCS illustrates a problem that may arise:

“Traders were reluctant to recording their transactions in a central registry, since it entailed that tax authorities and competitors could do inspections.”

¹⁸⁴ Railas 2004, *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, p. 346.

6.3 Signature

This sheds light upon another issue: that of integrity. A shipping company is probably not willing to use electronic bills of lading systems if they might be hacked or otherwise are transparent in some way. In the case of central registries, other companies obtain a clear insight into the transactions of their competitors.

In order to discuss the eventual drawbacks of digital signatures compared to manual ones, it is necessary to summarize the facts from section 3:4 which contains a comparison between the nature of a digital signature and manual one. Two problems need to be solved:

1. The confidentiality problem
 2. The problem of determining when the signature was made, in order to know whether it was done before the contractual period started.
- The cryptographic issue inherent in the first problem is outside the scope of this thesis.

The Hague-Visby Rules seem to be less clear than the Hamburg Rules and Rotterdam Rules as to electronic records. The latter writes more explicit about electronic documentation and especially the Rotterdam Rules focus on facilitating the way of handling bills of lading in an electronic environment.

6.4 Original

The Swedish Maritime Code 13:52 and 13:56 prescribe that the bills must be in original. Will a spread use of electronic bills of lading increase the risk of double sale if the electronic bills of lading can be easily duplicated and even altered? This is dependent on the computer security issues. Closed networks, as EDI, enable the recipient to alter the message that is received. If maritime fraud in the form of double sale may increase when using electronic transport devices, it should be analyzed how these problems could be avoided.

EDI are also associated with a problem of another sort: since it is part of contract law, it is ruled out by statutory law. As to business within countries, this problem can be addressed by regulations, statutes, ordinances and so on. Since a lot of business is conducted between countries, international treaty instruments such as conventions would be required.

6.5 Negotiability and document of title

Since bills of lading are part of civil law, the shipping companies, the forwarding agents and the banks can decide to use any of the payment and contractual systems available on the market today: Bolero, SEADOCS, @GlobalTrade and TradeCard. Keeping in mind that the former two

systems use negotiable documents and the latter two systems use non-negotiable we should ask ourselves whether it is necessary to keep the feature of negotiability at all? The reason this characteristic of bills of lading was ever introduced was the increase of speed of vessels and the risk of getting the goods in the harbour before the arrival of the bill of lading. Secondly, it provided a possibility of reselling the goods to new buyer in transit. Article 8(b) of the Rotterdam Rules aims at preserving the negotiability even though the transport record is in electronic form and not a physical paper.

The wording in the article 13:1 of the Swedish Maritime Code, 13:1 “or other document” does not specify what kind of document it could be. 13:46 in the same Code provides a possibility of signing documents electronically, but there is no information about whether an electronic record could be considered a document of title. It will be disclosed in the future if a new Swedish Maritime Code will be amended in a way that resembles the development towards an appropriate handling of electronic documents in the Rotterdam Rules. Interestingly, the travaux préparatoires of the latter Rules contained a lot of information on electronic records, unlike for example the Hague Rules and Hague-Visby Rules, in which it was not even mentioned. Although, in the travaux préparatoires of these rules there were discussions about the prima facie character of the bill of lading, but naturally nothing about computers and the technology for producing new document types. This is apparent since the Hague Rules were created almost one hundred years ago.

6.6 Payment

With regard to the payment, eUCP 600 prescribes, in article e3(b) that authentication is needed as well as a proof of non-alteration. These conditions would be favourable to the development towards electronic commerce. However, a provisional phase of application of both electronic ones and paper-based letters of credit may throw the handling process of these documents in disorder for a period. For example, article e2(c) provides that the old rules, UCP, will prevail in case the beneficiary has a choice between presenting an electronic record or a paper document. This gives rise to the possibility of having a system where countries which have not adjusted to new technology still use the old-fashion way of trading. This resembles the principle set out in the Rotterdam Rules.

In the eUCP Code article 8, it is stated something that could obstruct the risk of fraud, since one electronic record to be presented is enough.

6.7 The bill of lading as a pledge

The secured transactions law has been mentioned, as well as the role of the bank as a pledgee. The important question here is whether an electronic bill of lading could serve as a pledge, in the same manner as an ordinary bill of lading has done so far. This issue is probably dependent on the prospects of being able to guarantee that an electronic bill of lading has not been altered. In this respect, we have to return to the discussion about integrity, authentication and digital signatures. In Chapter 3 Section 7 different ways of securing one's rights to a title of ownership were outlined. Number two, "Possession of a symbol representing the object or the right.", would not be possible in the sphere of electronic bills of lading, because then it is no longer the document itself that represents the goods in the ship. Rather, it is the access to the document by means of a password.

6.8 Reflections on the questionnaires

There are so far a lot of impediments to the thorough implementation of electronic bills of lading. None of the companies that responded to the questionnaire or which were interviewed stated that they used electronic bills of lading. However, one of the eight companies (ACL) declared that they used non-negotiable electronic transport documents. Almost all their documentation was made electronically in the form of sea waybills and apparently only 2 % they claimed to use were conventional, paper bills of lading. The employee alleged trust as a key reason for accepting to handle the documents electronically. It is consequently possible when it comes to long-term business relations and when the ports for delivering the goods are fixed beforehand.

The Swedish bank Handelsbanken commented on the concept of originals and copies and assumed that the reason for the non-success of the electronic records was the problems in proving that a document that is received electronically is not a copy. This reflects the information in Section 3.2 about originals and storage of data messages. The comment that the distinction between copies and originals is only an artificial one is interesting in many ways. First, does it really have to be necessary to present an original document in the future? Secondly, if this practice will remain necessary, how should it be proved that an electronic document is an original? It is already stated in Section 3.6.4 that the key factor for proving that a document is an original is the possibility of authenticating it. Evidently, there are methods for doing this today. The major concept within authentication is integrity. This is traditionally done by manual signature, but in later years electronic signatures have been developed. The Swedish maritime code 13:46 does recognize it: "The bill of lading shall be signed by the carrier or a person acting on his behalf. The signature may be produced by mechanical or electronic means."

6.9 Overall analysis

In this part of the analysis, the concepts of “written document”, “signature”, “original”, “negotiability” etcetera will be combined with the model of analyzing “trustworthiness”. The presumption is that the presence or absence of trust is essential to explain how the frequency of EDI business is affected.

Going through the model referred to in the section “Trustworthiness” (*supra* 3.5), and checking each step, it could be mentioned that the company ACL (mentioned in the supplement) pointed out some of the factors that are in the model: the one about the length of the relationship. This shipping company emphasized this as a key factor for the use of their non-negotiable, paperless transport records – sea waybills.

We can also use the model mentioned in Section 3.5, about the means of obtaining confidential information:

- a) Information copied during transmission
- b) Information accessed during storage
- c) Information can be obtained from an authorized party

The model will in this analysis only be applied on Rules that contain information about all the relevant factors, i.e. confidentiality in this case.

If we go through them, one by one, and try the features of “original”, it could look like this:

Example: CMI Rules for Electronic Bills of Lading:

- a) Copy?
 - No, because of the Private Key
- b) Access?
 - No. During storage it is unlikely because of the high security in the system (it is stated in article 8c of the Rules that the Private Key does not contain any clues which could be used to connect it to the Contract of Carriage)
- c) Information from any authorized?
 - No, since the Private Key is unique to each new Holder (article 8a).

The study shows that CMI Rules for Electronic Bills of Lading is an appropriate tool for using electronic records, keeping in mind that its features provide confidentiality. Trustworthiness is though just one advantage. The Rules do not have the force of law, which could be a drawback. Some of the legislations in this thesis, as well as Rules like CMI Rules for Electronic Bills of Lading and UNCITRAL Model Law on Electronic Commerce, encompass characteristics that could explain the lack of a breakthrough as to the use of electronic bills of lading. The fact that some of them are not clear enough in the wordings is a problem. The forwarding agent UNITRANS pointed out the different cultures as a key factor. However, the Rotterdam Rules seem to be more favourable than the

others, which is a good sign for the future for those who advocate the use of electronic documents.

In the text it appeared that there were many hindrances for the development, but signature and original proved to be even harder than the other problems to overcome. The document of title function, negotiability and written document are related, so they should not be treated separately. Non-negotiable documents are apparently used by TradeCard, @GlobalTrade and ACL, but are those systems sufficient for the market in the future? Under the assumption that negotiable bills of lading are necessary for the interested parties, focus should be placed on developing these documents in an appropriate way. That could be obtained by improving data security, (for example article 11 of the eUCP Code, *supra*), as well as by creating business trust and new ways of signing documents. This could possibly be achieved by inserting manual, scanned signatures. The absence of these factors are, in summary, probably crucial to the situation today, with no breakthrough for the use of electronic documents. Furthermore, the shipping business seems a bit conservative, and is therefore prone to keep the conventional document types.

7 Conclusion

The use of electronic bills of lading in the Swedish shipping business has not yet gotten a clear breakthrough. However, the information from the enquiries in this thesis shows that the company ACL uses sea waybills in electronic form. These are not negotiable, and therefore they do not provide possibilities to resell the cargo in transit. According to ACL, trust is crucial in the business, which is an explanation why it is practicable to use the electronic sea waybills. The aspect of trust was also mentioned by the bank: the notion of “original document” is probably a key factor to the lack of a breakthrough for electronic records. The business can only be conducted if there is confidence between the trading partners.

The discussed features of a negotiable transport document, regardless whether it is paper-based or an electronic one, are “written document”, “signature” and “original”. These are highly intertwined, but signature and original seem to be a bit worse obstacles than the first one. The Hamburg Rules approach is for example quite permissive to other means of signing a document than handwriting.

It will be interesting to get to know how many countries will sign the Rotterdam Rules in the future. Even more interesting, though, is it to see the recognition or absence of recognition of the provisions by courts and arbitrators. These Rules contain provisions that are similar to provisions in the eUCP Code. Both provide possibilities for using electronic documents simultaneously with the conventional documents, for example exchanging an electronic document for a paper-based one or the other way around, even though the parties had agreed to issue only an electronic one at first.

Nowadays, there are obviously minimal risks of maritime fraud, for example double sale, in Sweden. How will this be affected by an increased use of electronic documents, which can be replicated many times? This is of course also a technical issue, not only a legal one.

Supplement

A bank

This section contains an interview with one employee and an questionnaire with another employee.

Questionnaire

1. Are electronic bills of lading used by banks in Sweden today?

No, not as far as I know.

2. Does Handelsbanken accept such a document? If it does, what is the procedure?

- (They are not accepted.)

3. If it is not accepted – why?

There have been rules for electronic documents in use, but the major issue was this:

How can a shipping company or a forwarding agent be sure that a bill of lading is an original if the company receives it electronically?

4. What needs to be changed in order to make electronic bills of lading accepted in the future?

The interview describes a lack of credibility as a main source for the non-implementing of the electronic bills of lading. The electronic bills of lading are not used by this particular bank, and the combination of electronic bills of lading and letter of credits is not used anywhere as far as she knows.

I also wanted to get a little bit of knowledge about the risk of fraud, but as no frauds are committed nowadays in Sweden as to bills of lading, the question regarding electronic bills of lading is highly theoretical.

Handelsbanken in Sweden has never been connected to the Bolero system. It was never successful due to the lack of security.

According to the employee, there are still no secure systems for electronic bills of lading. One of the employees holds that the bank would possibly be less reluctant to electronic documents if forwarding agents and shipping companies accepted the use of them.

Interview

All banks in Sweden are connected to the S.W.I.F.T. system, of which the organization has its headquarters in Brussels.

When I raised the question about reselling goods repeatedly in transit, it turned out that it is not uncommon that the cargo is sold to ten different buyers during one shipment. This is especially the case for oil., but also other types of cargo can be resold many times.

Some decades ago, the vessels started to go faster. This gave rise to the risk of the bill of lading not arriving in time. However, this problem is not present nowadays according to Handelsbanken, The reason is that the bill of lading is sent by courier and the maximum transportation time for the document is three days.

If the goods are resold in transit, the number of items must correspond to the information in the letter of credit. If, for example, a ship contains 400 computers and 100 are resold to a new buyer, the rest must be resold to another party if the company wants to prevent itself from being put at disadvantage.

The employee reckons that intermodal transportation, with a Swedish company as exporter, is carried out by the issuance of one paper document. Non-negotiable sea waybills are frequently sent from North America to Sweden, but the other direction is not common.

Forwarding agents

UNITRANS

1. Are electronic bills of lading used in the shipping industry nowadays?
Electronic bills of lading are not used in the shipping industry in Sweden.

2. Does UNITRANS use such electronic documents?
No

3. What is the reason for not accepting it?
-

4. What needs to be changed in order to make electronic documents accepted in the future?

The employee is very doubtful about the introduction of an electronic bill of lading system in the future. He claims that it will take a long time to implement a system that is recognized by both banks and customers. The cultural differences between continents are too large. Even Europe and Asia will have a hard work to reach any agreement. Who wants to spend those millions of working hours that it will take to decide on anything? He draws a parallel to the climate negotiations, in which it turned out to be very hard to agree on strategies. Even if it is not a perfect comparison according to his opinion, he still believes that the cultures in the world are so different that it is hard to negotiate.

5. Is it possible to resell cargo to new buyers while the vessel is at sea if the bill of lading is not a paper?

-

NovaTrans

The same questions were raised to this agent, but the responses were given in a summary.

The reason is probably that a bill of lading is a prima facie document, which enables a transfer of the possession of the cargo (the title to it) from one party to another. As far as he knows, it is impossible to resell the goods in transit without an original document, i.e an endorsed paper bill of lading.

Shipping companies

ACL

The following interview was made with ACL (Atlantic Container Line). ACL started its business in 1967. This company was the first shipping company ever to try to abolish the original (paper-based) bills of lading. In 1981 and 1982, ACL tried to introduce Cargo Key Receipt. The object was to attempt to handle an original document electronically in collaboration with banks. The system was not successful, because it turned out to be no need for having an original document. The employee tells me that the trade is based on confidence and long-term business relations. Therefore, it is possible to use the sea waybills to such a big extent. In the computer system, the cargo is documented. Information is then given to ACL from the shipper. If it is a paper bill of lading, ACL does not know if the goods have been resold in transit.

1. Are electronic bills of lading used by shipping companies today?

-

2. Are they used by ACL? If not, then why?

At ACL almost only electronic documents are used. However, it is not electronic bills of lading in the sense that they possess the negotiable feature of a paper bill of lading. It is an electronic sea waybill, which cannot be connected to letters of credit. Additionally, it cannot be resold on the market. Only 2 % of the transport documents at ACL are paper bills of lading, i.e original bills of lading.

3. What is the procedure for issuing an electronic bill of lading?

An instruction is sent by fax and then it is sent back in PDF format, which is called "DFR" – Datafreight receipt. This was developed during the period 1971-73. The Swedish maritime lawyer and professor Kurt Grönfors was involved in this project and ACL became the first company to use it.

4. What needs to be changed in order to make electronic bills of lading accepted in the future?

- (Electronic documents are apparently already in use.)

5. Is it possible to resell cargo to new buyers while the vessel is at sea if the bill of lading is not a paper?

No, with regard to an ordinary transaction within the letter of credit system it is not possible, since the bank needs the paper document as a security.

Wallenius Wilhelmsen

1. Are electronic bills of lading used by shipping companies today?

We are not using electronic bills of lading due to the fact that number of negotiable bills used by our company is limited.

2. Are they used by Wallenius Wilhelmsen? If not, then why?

No, we do not accept/issue electronic bills of lading. Reason as stated above.

3. What is the procedure for issuing an electronic bill of lading?

Not applicable for us.

4. What needs to be changed in order to make electronic bills of lading accepted in the future?

We are not planning to implement electronic bills of lading since not interesting for us.

5. Is it possible to resell cargo to new buyers while the vessel is at sea if the bill of lading is not a paper?

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Bibliography

Literature:

Reed, Chris; Angel John, *Computer Law*, Fifth Edition, OXFORD UNIVERSITY PRESS, New York, 2003

Aikens, Richard; Boals, Michael; Lord, Richard – *BILLS OF LADING*, informa, London, 2006

Gaskell, Niholas and Asariotis, Regina; Baats Yvonne - *Bills of Lading: Law and Contracts*, LLP, London, 2000

Grönfors, Kurt, *Towards Sea Waybills and Electronic documents*, Svenska Sjörettsföreningen i Göteborg, Elanders tryckeri, Kungsbacka, Sweden, 1991

Hermanson, Tell (generalsekreterare, ICC:s svenska nationalkommitté), *Rembursregler (ICC Uniform Customs and Practice for Documentary Credits)*, 2007 REVISION, International Chamber of Commerce and ICC Sweden, Stockholm, 2006

Holmberg, Gunilla – *Bills of Lading Fraud*, Juristförlaget, Stockholm, 1985

Johansson, Svante O. – *Stoppningsrätt under godstransport*, Norstedts juridik, Stockholm, 2001

Johansson, Svante O. – *AN OUTLINE OF TRANSPORT LAW, International Rules in Swedish Context*, Jure Förlag AB, Stockholm, 2008

Philip, Allan, *The Travaux Préparatoires of the Hague Rules and of the Hague Visby Rules*, Comité Maritime International

Prins, J.E.J; Ribbers, P.M.A.; van Tilborg, H.C.A.; Veth, A.F.L.; van der Wees, J.G.L. – *Trust in Electronic Commerce, The Role of Trust from a Legal, an Organizational and a Technical Point of View*, Kluwer Law International, The Hague, 2002

Railas, Lauri – *The Rise of the LEX ELECTRONICA and the International Sale of Goods*, Helsinki, 2004

Schelin, Johan – *The Swedish Maritime Code (1994:1009)*, third edition, Axel Ax:son Johnsons institut för sjörätt och annan transporträtt, Stockholm, 2006

Siig, Kristina Maria – *BOLERO, A case study on non-legislative rule-making*, marius, Sjørettsfondet, Oslo, 2001

Smedinghoff, Thomas, *Online Law: The SPA's Legal Guide to Doing Business on the Internet*, 2007

Todd, Paul, *Cases and materials on bills of lading*, BSP Professional books, printed in Great Britain by Billing and Sons Ltd Worcester, 1987

Wilson, John F. – *Carriage of Goods by Sea*, sixth edition, PEARSON Longman, printed in Great Britain, 2008

Dissertations:

Nova, Luis E. – *Electronic Data Interchange; Its benefits in trade activities for developing countries*, 1999

Ibrahima, Sy – *Electronic Bills of Lading, Implications and Benefits for Maritime Transport in Senegal*, 1999

Journal articles:

Bell, Kevin, *Sphere of Application of the Vienna Convention on Contracts for the International Sale of Goods*, 8 Pace Int'l L. Rev. 237, 1996

Dubovec, Marek, *The problems and possibilities for using electronic bills of lading as collateral*, Arizona Journal of International and Comparative Law, 23 Ariz J. Int'l & Comp. L. 437, 2006

Laryea, Emmanuel, *International Review of Law, Computers and Technology*, 2005

Vilus, Jelena, *Uniform Law Review* Vol. 8. Issue 1-2, 2003

Whitaker, R. David, *Letters of credit and electronic commerce*, Vol. 31, 1995

Reports:

Electronic Commerce: Legal considerations, 1998

The Legal Position of the Member States with Respect to Electronic Data Interchange, TEDIS Final Report, Commission of the European Communities, Brussels, 1989

UNCITRAL report A/CN.9/WG.IV/WP.69

Webpages:

http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf

<http://www.torvund.net/artikler/jubiri.asp>

<http://www.comitemaritime.org/cmidocs/rulesebla.html>

<http://www.comitemaritime.org/cmidocs/rulesebla.html>

http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf

<http://www.rotterdamrules2009.com/cms/index.php>

http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-D-8&chapter=11&lang=en

<http://davismarine.com/articles/Rotterdam%20Rules%20with%20Index.pdf>

<http://www.comitemaritime.org/draft/travaux.html>

<http://www.comitemaritime.org/singapore2/conference37/issue/issues1.html>

http://www.comitemaritime.org/singapore/issue/issue_eco_rep.html

<http://www.admiraltylaw.com/statutes/hague.html>

<http://www.admiraltylawguide.com/conven/hamburgrules1978.html>

www.bolero.net

www.boleroassociation.org

http://www.bolero.net/solutions/supply_chain.html

http://www.boleroassociation.org/downloads/bal_sc.pdf

http://www.globaltradecorp.com/gtc_com_profile.htm

http://www.globaltradecorp.com/gtc_prod_consulting.htm

http://www.globaltradecorp.com/gtc_prod_ucon.htm

<http://www.tradecard.com/platform/index.html>

www.upf.pf/IMG/doc/4Myburgh.doc

Instruments:

The Hague-Visby Rules, 1968

The Hamburg Rules, 1978

The Swedish Maritime Code (1994:1009)

The Rotterdam Rules, 2009

The CMI Rules for Electronic Bills of Lading, 1990

The UNCITRAL Model Law on Electronic Commerce, 1996

Table of Cases

Ellida ND 1902 (SH)

Kum v. Wah Tat Bank Ltd. [1971] 1 Lloyd's Rep. 439 (P.C.)

Pyrene v. Scindia Navigation Co [1954] 2 QB 402

Rafaela S, The. *See* J.I. MacWilliam Co. Inc. v. Mediterranean Shipping Co. S.A.

The Waren Case: Waren Import Gesellschaft Krohn & Co.v. Internationale Graanhandel Thegra NV [1975] 1 Lloyd's Rep. 146

