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THE FUTURE DIRECTION OF CARRIAGE OF GOODS

Unformity, Harmonization and e-Compatibility

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The future of carriage of goods by sea is set fair towards the 'promised land' of uniformity, harmonization, e-compatibility. The present bleak and stormy picture of increasing fragmentation, geo-political division and e-uncertainty, has been salvaged by the recent co-operation of CMI and UNCITRAL. With a following wind, and delegates from all nations pulling in unison, the ship may avoid the rocks and reach its intended destination in the next few years. If so, this will represent a dramatic achievement and result in a boost to world trade.

This paper[1] seeks to:

- **I.** **Outline the history of carriers' liability and the various régimes of the Hague Rules, the Hague-Visby Rules and the Hamburg Rules.**
- **II.** **Explain the proposals in the Draft Instrument being prepared by CMI for presentation to UNCITRAL.**
- **III.** **Set out the role of electronic communications and e-commerce in the field of the carriage of goods.**
- **IV.** **Address the issue of multi-modal transport and the responses to the development of multi-modal bills of lading and Conventions.**

[1] Prepared with the assistance of Jonathan Chambers and Jo Cunningham of 4 Essex Court.

I The History of Carriers' Liability

Winston Churchill was fond of saying that we could not foretell what lay in the future without studying the past. He would have written a mighty history of the battles waged by shipowners since the 19th century to retain their supremacy over 'mere' shippers and cargo-owners and of the diplomatic battles from Hague to Hamburg to change the contractual landscape of carriage of goods by sea. We must look briefly at history in order better to understand the future.

Merchant princes

This begins with merchant princes and colonial dominance and develops in modern times into a tussle between the developed world and the emerging economies of the developing world. Essentially the divide was, and remains, one between ship-owning and non ship-owning countries.

It is said that England owed its entire naval, and therefore colonial, success to a clockmaker, Thomas Harrison who made the first sea clock in the late 17th century which enabled seafarers to crack the mystery of Longitude[2]. Prior to this invention, the English fleet was regularly trashed on Land's End by navigators such as Admiral Sir Cloudsley Shovell who could handle Latitude (and a tot of rum) but not Longitude.

The introduction of steam powered vessels in 19th century and the massive increase in international trade accompanying the industrial revolution, led to shipowners in Northern Europe and North America achieving great commercial power. In addition to bargaining strength, the absence of any specific rules on carriage of goods by sea and the *laissez faire* approach of the Courts to contracting parties, meant that carriers were able to exclude *all* liability for unseaworthiness or negligence on the basis of the doctrine of freedom to contract.

As a result, the absolute exclusion of liability by the carrier became common place under many bills of lading. Shipowners sometimes justified this on the basis that they should not be blamed for the fact that their crews could not work the 'new-fangled' machinery. Exclusion of liability was, however, far from uniform. The liability of carriers varied from country to country, governed as it was by the domestic law of each country.

Many governments, lobbied by shippers and other cargo interests, were increasingly dissatisfied with the ability of the carrier to contract out of his liabilities at common law. Gradually national legislation was introduced to redress this perceived injustice.

Of the legislation, which passed on to the statute books of the various countries, the US Harter Act 1893 was of course the most influential. It sought to achieve some balance between the risks run by each of parties to a contract for the carriage of goods. It also exercised an influence on carriage of goods by sea far beyond its years.

[2] For an interesting account see "Longitude" by Dava Sobel. Fourth Estate; ISBN: 1857025717

There was, therefore, in the 19th century a patchwork of national legislation and precious little uniformity. The absence of any uniformity was considered by a few of the enlightened at the time to be unsatisfactory. The jurist Mancini put the need for uniformity elegantly during a lecture at the University of Torino in 1860:

> "*The sea with its winds, its storms and its dangers never changes and this demands a necessary uniformity of juridical regimes*"[3]

The 20th Century Conventions

Mancini's words were gradually heard by governments across the world. However it took 64 years before the international community convened at the Hague and agreed a set of Rules as to sea carrier's liability which was intended to be uniformly applicable across the world.

Mancini's words obviously continued to echo down the 20th century because in 1968 and 1978[4] further international conventions regarding sea carrier's liability came into existence, the Hague-Visby Rules 1968 and the Hamburg Rule s 1978. The trouble was that they were different, the latter radically different, from the 1924 Hague Rules. To compound these difficulties, different countries signed up to the Convention of their choice. It was a case of 'Yes' lets have uniformity – but lets have my uniformity not yours.

Let us start with a brief resumé of the three 20th century conventions.

The Hague Rules

The full name of the 1924 convention which gave rise to The Hague Rules was "the International Convention for the Unification of Certain Rules Relating to Bills of Lading".

The Hague Rules were the product of a CMI[5] proposal which took their cue from the US Harter Act of 1893. For the first time there was an internationally recognized régime governing the liability of carriers under contracts for the carriage of goods by sea. The aim was uniformity in all countries which were parties to the convention, since The Hague Rules operated by law and parties could not opt out.

The Hague Rules assessed the carrier's standard of care by reference to "*due diligence*" in relation to seaworthiness rather than the (theoretically) stricter common law absolute standard of seaworthiness. The initial burden of proof lay on the shipper to show unseaworthiness[6]; and only if that burden was been discharged, did the burden shift to the carrier to prove due diligence to make the

[3] Quoted by Patrick J.S. Griggs, President of CMI, in his seminal paper, *Uniformity of Maritime Law, An International Perspective* (University of Southampton, 1999).
[4] The Hamburg Rules came into force in the signatory states on 1st November 1992 on the accession of the 20th signatory state.
[5] Comité Maritime International
[6] The Toledo [1995] 1 Lloyd's Rep 40

ship seaworthy. In addition, the carrier was given wide protection by exemptions from liability from for example errors of *"navigation and management"* and damage caused by fire unless caused by "*actual fault or privity*" (Article IV rule 2).

The framers of the Hague Rules congratulated themselves for restricting the carrier's freedom considerably. However as the century wore on the apparent leniency of the Hague Rules towards the carrier became increasingly criticized.

The Hague-Visby Rules

By 1968, the tide of opinion was that the Hague Rules required a facelift; in particular, cosmetic surgery to the £100 limit which was regarded as unacceptably low (and sagging) in the modern world. The CMI produced a protocol to the 1924 Convention, which was agreed at Brussels in 1968 and became known as the Hague-Visby Rules.

The package/unit limit of liability was increased and the definition of the package/unit was improved. However the structure and form of the Hague Rules remained largely unchanged. The Hague-Visby Rules were, therefore, essentially the Hague Rules with a (slightly) more acceptable face.

The Hamburg Rules

There was, however, a growing feeling in other parts of the world that more radical (orthopedic) surgery was required to the law of carriage by sea. The scalpel was taken up, not by CMI, but by UNCITRAL[7]. The need for change was advocated on two levels:

(1) Legal: it was said that the Hague and Hague-Visby Rules were outdated and defective;
(2) Political: it was said that the voices of developing countries had not been heard in 1924 and 1968.

The Hague and Hague-Visby Rules were castigated as 'unbalanced' and unfairly favouring the interest of carriers over that of the shippers.

UNCITRAL sought to redress the balance by the Hamburg Rules which were agreed at a Diplomatic Conference in 1978 but only entered into force over a decade later on 1st November 1992.

The Hamburg Rules represented a victory for shippers. The scales were heavily tilted against the carrier[8]:-

(1) The carrier was made liable for loss of or damage to the goods whilst in his charge *"unless the carrier proves that he, his servants or agents, took all measures that could reasonably be required to avoid the occurrence and its consequences."*[9];
(2) The period of the carrier's responsibility was extended beyond the ship's rail to cover the period when the goods are in charge of the carrier in port[10];

[7] United Nations Commission on International Trade Law.
[8] In a similar fashion to the Warsaw Convention 1929 or as amended at The Hague 1955 in the field of international carriage of cargo, passengers and their baggage by air for reward.
[9] Article 5.1.
[10] Under the Hague and Hague-Visby Rules the period is, in the absence of contractual stipulation, 'tackle to tackle'.

(3) A 'harsh' regime of 'presumed fault'[11] of the carrier was introduced; and
(4) The Hamburg Rules imposed a uniform burden of proof on the carrier, in effect, to disprove fault[12] without granting a list of ameliorating exceptions.

Further Unilateral Developments

During 1993 a number of European Union states expressed interest in ratifying the Hamburg Rules. France produced a draft report indicating areas in which it might be possible to seek amendments to the Hamburg Rules. The possibility of ratification and then revision of the Hamburg Rules was mooted. The European Commission began to investigate Community-wide action to harmonise the laws of member states with respect to intermodal transportation, including carriage of goods by sea.[13]

Various countries, including Australia[14], Canada[15] and various Scandinavian[16] countries, began to go their own way, enacting holding and/or hybrid legislation which effectively 'straddled' both the Hague-Visby and Hamburg Rules. This added to the growing sense of confusion and muddle.

In 1996 the US Maritime Law Association (MLA) completed preparations of a draft Bill updating the US Carriage of Goods by Sea Act 1936. It is something of a hybrid between the Hague-Visby Rules and the Hamburg Rules.[17] In May 1996,

[11] In a similar fashion to the Warsaw Convention 1929 or as amended at The Hague 1955
[12] The only exception being "fire" where the burden of proof is on the shippers – Article 5.4.
[13] See R. Asariotis, Y. Baatz, *et al*,. "Intermodal Transportation and Carrier Liability", June 1999.
[14] Australia has formally enacted both the Hague-Visby Rules and the Hamburg Rules in its Carriage of Goods by Sea Act 1991. Only Part 2 of the Act (containing the Hague-Visby Rules) is in force. Entry into force of the Hamburg Rules (Part 3) has been consistently delayed. Following proposals by a 1995 Cargo Liability Working Group, the 1991 Act was amended by Carriage of Goods by Sea Amendment Act 1997 to incorporate various *quasi*-Hamburg ideas and limits (see "Improving Australia's Marine Cargo Liability Regime", Information paper issued by Department of Transport and Regional Development, July 1996). In July 1998, the Carriage of Goods by Sea Regulations 1998 came into force which contain "amended Hague rules" as they will apply in Australia and require periodic review of the rules. Part 3 of the 1991 Act (containing the Hamburg Rules) will be repealed by 2007 unless the Government positively adopts them before that date. Interestingly, the regulations introduce the concept of the "sea carriage document" to cover bills of lading and non-negotiable documents. (For an excellent analysis of the new provisions, see Ebsworth & Ebsworth, Australian Transport Law Bulletin No. 16, July 1998.)

[15] Canada also has holding legislation, but was proposing to introduce legislation similar to that in Australia.

[16] Four Scandinavian countries revised their maritime codes as from 1 October 1994 so as to incorporate as much of the Hamburg Rules as possible, while remaining parties to the Hague-Visby Rules (see 135 Gard News October 1994, 26). The new codes build on the approach adopted in the UNCTAD/ICC Rules for Multimodal Transport Documents 1992. The codes adopt the wider period of responsibility of the Hamburg Rules and have removed the catalogue of Hague Rules exceptions, replacing it with a simple fault-based rule, although retaining the error in navigation and fire defences.
[17] The US MLA Draft Bill retained the general structure of the Hague and Hague-Visby Rules, but abolished the error in navigation defence (albeit with a proviso putting the burden of proof onto the claimant), extended the period of coverage to receipt/ delivery of the goods (*pace* Hamburg Rules), introduced the concept of contracting and performing carriers, adopted the Hague-Visby Rules limits of liability with the alternative weight or packages limits for containers, along with the modern test for the breaking of limits, introduced provisions covering waybills and electronic bills

the US MLA voted by a majority to accept the draft. A draft Bill was prepared by the US Senate Commerce Committee in 1998. However, there has been opposition and criticism from *inter alios* the international community.

Position at the end of 20th century - fragmentation

The position at the end of the 20th century was one of increasing fragmentation and geo-political division. In 1999, there were:

(1) 87 states party to the 1924 Hague Convention, mainly in the developed world;
(2) 29 states party to the 1968 Hague-Visby Protocol, mainly but not exclusively in the developed world including the United Kingdom[18];
(3) 21 parties to the 1979 Protocol (the SDR currency protocol);
(4) 26 states were signatories to the Hamburg Rules with the majority of these states in Africa and which (with respect) comprise none of the major trading nations of the world.

Thus, the position at the dawn of the 21st century is unsatisfactory. The geo-political tensions remained and increasing fragmentation was all too apparent. There was less uniformity in the fourth quarter of the 20th century than in the second quarter.

No less than three international conventions on the carriage of goods by sea were in existence each with its own problems and advantages and each with its own critics. The debate about carriage of goods by sea was becoming increasingly polarized. Leadership and reform was urgently called for.

Salvage operation by CMI and UNCITRAL

Enter CMI. So often in its 104-year history, CMI has proved pivotal in channeling diverse international views towards the path of uniformity. Beautiful Sydney also played a role: the 1994 CMI Sydney conference stopped the slide towards disintegration.

The majority opinion was that the proliferation of regimes was unacceptable. CMI set to work. By May 1999 the International Sub-Committee (ISC) had produced a Final Report summarizing the new thinking on the topic[19] - a rich mix and blend of the best from Hague/ Hague-Visby and Hamburg and a liberal injection of modern ideas. The 22 issues raised in the ISC report included:-

(1) adding more definitions, e.g., of carrier and shipper;
(2) increasing the period of coverage i.e. from the position in the Hague-Visby Rules;

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and (bizarrely) included a xenophobic provision outlawing foreign arbitration clauses contrary to the New York Convention(!). There were also to be amendments to the Federal Pomerene Bills of Lading Act.

[18] Accession to the Hague-Visby Rules continued with Japan in 1992 and Greece in 1993 (perhaps as a reaction to the Hamburg Rules).

[19] There was a new spirit of compromise and a desire to take the best from the Hague/ Hague-Visby Rules and the Hamburg Rules and strike a balance between the interests of shipowners and shippers.

(3) simplifying the catalogue of exceptions;
(4) defining and clarifying the identity of the carrier;
(5) regulating the use of reservations on bills of lading;
(6) clarifying the scope of application of international conventions;
(7) the employment of jurisdiction clauses.

However there remained deep divisions on two aspects relating to the basis of liability:

(a) The burden of proof; and
(b) Whether to delete the error in navigation defence.

Later in 1999 CMI and UNCITRAL linked hands and launched 'Issues of Transport Law'. The CMI proposals were then debated in New York in July 2000 at a joint CMI/UNCITRAL colloquium; and again recently revised the proposals at the CMI conference in Singapore in February 2001 with a view to submitting a Draft Instrument to UNCITRAL. In addition, the UN Economic Commission for Europe (UN/ECE) has also been considering the possibility for reconciling and harmonising civil liability regimes governing combined transport.

Thus, impressive forces are now hard at work and great leadership is being shown, in particular by the CMI under its outstanding President, Patrick J.S. Griggs. It now appears to be almost universally accepted within the shipping, insurance and legal worlds that we must have harmonisation and uniformity, geo-political divisions notwithstanding. Speedy action may head off the US Congress from unilateral Hamburg Rules based legislation and encourage the US to participate in the production of a harmonised regime through CMI/UNCITRAL.

II 2001 Revised CMI Draft Outline Instrument

Sterling work was done by the Transport Committee[20] at the CMI conference in Singapore earlier this year. A Revised CMI Draft Outline Instrument was produced. I want to give you a brief thumbnail sketch of its main features because this is where the future direction of the law of carriage of goods by sea can best be seen:

(1) *Definitions:* A detailed and tightly drawn definitions section defines everything from "*carrier*"[21] to "*transport document*"[22]. The definition of "*performing party*" was narrowed to cover only those parties whose performance actually involves the handling or storage of the goods. (Chapter 1)

(2) *E-commerce:* A specific provision entitling the parties to communicate and sign electronically. The Singapore Conference resolved that the final instrument should facilitate and be compatible with the development of electronic commerce. (Chapter 2).

(3) *Scope of Application:* A '*scope of application*' provision which embraces all contracts of carriage involving places of receipt or delivery in different contracting states. The Singapore Conference took the major step of deciding to cover door-to-door marine transportation. (Chapter 3).

(4) *Period of Responsibility:* A fall-back 'period of responsibility' provision which would apply the Draft Instrument to the whole of the door-to-door period in the absence of mandatory law coverage of the inland part of the journey. (Chapter 4).

(5) *Obligations of the Carrier:* Basic[23] obligations of the carrier to make the ship seaworthy, properly man and equip and make the holds fit. (Chapter 5).

(6) *Liability of the Carrier:* There was overwhelming support at the CMI conference in Singapore for a fault based regime rather than a more stringent one, i.e. any form of strict liability. All of the alternative drafting proposals provide for *prima facie* carrier liability for loss, damage and delay and place the burden of proof upon proof of such damage, loss or delay on the carrier. The debate centered on the *scope* of the burden of proof. In the current Draft the carrier is liable for loss, damage or delay if the occurrence causing loss, damage or delay took place "*during the period of its* [the carrier's] *responsibility*":

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[20] Under the able chairmanship of Stuart N. Beare.
[21] "'Carrier' means a person who enters into a contract of carriage with the shipper".
[22] "Transport document" means a document issued pursuant to the contract of carriage by the carrier or a performing party that (a) evidences or contains the contract of carriage, or (b) evidences the carrier's or a performing party's receipt of goods under the contract of carriage.
[23] Hague Rules type.

Alternative I(a) provides *"unless the carrier proves that neither its fault nor that of a performing party caused the loss or damage"*[24]
Alternative I(b) provides *"unless the carrier proves that such loss or damage was caused by events or through circumstances that a diligent carrier could not avoid or the consequences of which a diligent carrier was unable to prevent"*[25]
Alternative II provides *"unless the carrier proves that neither its fault nor that of a performing party caused the loss or damage. In order to prove the absence of fault the carrier must provide evidence that it has taken such reasonable measures as the characteristics of the transport and the circumstances of the voyage require and, in particular, that it has taken the measures described in article 5.2."*

(7) *Errors in Navigation and Management of the Ship*: There was considerable support at the Singapore Conference for eliminating the exemptions for errors in the navigation and management of the ship[26] but retaining the majority of the remaining exemptions and re-casting them in the role of 'switch' mechanism giving rise to a presumption (on the occurrence of such a peril) of an *absence* of fault on the part of the carrier.

(8) *Calculation of compensation* is along Hague-Visby lines[27] excluding consequential damages but including damage due to delay. (Chapter 6.2).

(9) *Performing Parties:* who whilst not carriers themselves but perform the carrier's core obligations under the contract of carriage *may* safely rely on the terms of the instrument in the absence of their own agreement to the contrary. (Chapter 6.3).

(10) *Delay in Delivery*
There was widespread support for a delay in delivery provision directed towards the express contractual delivery time but less support for any provision based on a 'reasonable' time for delivery. (Chapter 6.4).

(11) *Deck carriage*
There are restrictions on carriage of cargo on deck coupled with the removal of the right of if the carrier to limit if carried on deck in breach. (Chapter 6.6)

(12) *Package Limitations*
There are package limitation provisions which it is intended will be brought

[24] (i.e. similar to the Hamburg Rules)
[25] (i.e. similar to the CMNI Budapest Convention)
[26] The navigation exception was originally contained in the Harter Act 1893 – prior to which the American Courts did not permit the exception since it was considered to be against public policy (see Gosse, Millerd v Canadian Government Merchant Marine (1927) 29 Ll. L. Rep. 190 at 190-191). The English Courts, on the other hand, had been prepared to permit the exception even prior to the Hague Rules (Art IV rule 2). The exception does not appear in the Hamburg Rules. The House of Lords considered the exception recently in The Hill Harmony [2001] 1 Lloyd's Rep 147.
[27] i.e. according to the "*value of the goods at the place and time of delivery according to the contract of carriage*".

into line with the amounts specified in article 8 of the 1996 Protocol to the Convention on Limitation of Liability for Maritime Claims. (Chapter 6.7).

(13) *Obligations of the Shipper:* The basic obligations of the shipper are to deliver the goods ready for carriage and provide accurate information. The Singapore Conference made the shipper's liability for wrong or incomplete information more stringent and the shipper's liability for damage caused by the goods fault-based. (Chapter 7).

(14) *Transport Document:* There is a requirement on the carrier to issue an appropriate transport document on the shipper's request. Provision is made for electronic signatures. The transport document is *prima facie* evidence of the carrier's receipt of the goods and conclusive evidence if transferred to a third party acting in good faith. (Chapter 8)[28].

(15) *Freight:* Standard freight provisions giving effect to the main rule that carrier must have performed the carriage before remuneration becomes due but leaving the parties free to contract otherwise. (Chapter 9).

(16) *Delivery to Consignee:* Delivery provisions, which oblige the consignee to take delivery at the appropriate place and time and bring the carrier's legal liabilities to an end (Chapter 10).

(17) *Right of Control:* Carefully drawn provisions make the shipper a "controlling party" (i.e. entitled to give the carrier instructions) except where he has agreed otherwise with the consignee (Chapter 12).

(18) *Transfer of Rights under Negotiable Transport Documents:* Provisions facilitating the issue of Negotiable Transport Documents and attornment by the carrier on their transfer. (Chapter 13).

(19) *Rights of Suit: A* classic 'rights of suit' provision is included which ensures that only contracting shippers, consignees, transferees or subrogated parties can have rights of suit and then only where they have acquired a sufficient interest. (Chapter 13).

(20) *Time Bar:* The Draft Outline Instrument still contains a two-year time limit; but the delegates to the Singapore Conference expressed the view that a one-year limitation period would be adequate.

(21) *General Average:* A general average provision taken from article 24 of the Hamburg Rules enshrines the time-honoured approach that GA adjustments and awards have to be made *before* general questions of liability are considered. (Chapter 15).

(22) *Other Conventions:* A provision preserving obligations under other conventions, including the Athens Convention. (Chapter 16).

[28] There was less support at the Singapore Conference for adding the requirement that the third party had to have "paid value or otherwise altered its position".

(23) *Limits of Contractual Freedom:* A provision allowing any contractual stipulation save which might lesson the liability of any party under the contract of carriage. . (Chapter 17).[29]

There is much hard negotiation to be done and there are many difficult issues which remain to be resolved. In the words of Cecil Rhodes (on his death-bed), there is still "*So little done, so much to do.*[30] However, the Revised CMI Draft Outline Instrument is taking shape and will be submitted to UNCITRAL in the near future. This is where the future shape of the law of carriage of goods lies.

III e-Commerce and Electronic Bills of Lading

Man's future and the future of world trade is bound up with electronic communications and the Internet. Despite the recent travails of "dot-com" stocks the likes of Amazon, E-bay, Boo and Lastminute.com, e-commerce is here to stay.

These days, everything from shares to money by way of dot.com futures are e-traded or traded on the Internet. My prediction is that e-bills of lading, e-waybills, e-airway bills and e-negotiation of such transportation documentation will be as common in 10 years time as is e-mail today.

The concept of electronic bills was first floated a decade ago, but progress has painfully slow. Why? Are e-bills of lading viable? Are e-bills really advantageous? Let us start by examining the history of bills of lading.

Role of the Bill of Lading

The first known reference to a negotiable bill of lading can be traced back as far as the mid-18th century. The invention was as important for international trade as the invention of paper money[31] by John Law in the late 17th century was to domestic trade and as derivatives are to modern banking and credit.

At a stroke, the invention of negotiable bills enabled goods to be traded before their (uncertain) arrival in some far-flung port. This was a boost to trade.

Since the 1750s the pivotal function of bills of lading has not changed. They continue to fulfil three crucial functions as:

(i) a receipt for the goods;
(ii) evidence of the contract of carriage (or the contract itself);
(iii) a document of title.

[29] Live animals and special goods justifying a special agreement are excluded from this requirement.
[30] Cecil Rhodes (1853-1902), Adventurer and Statesman.
[31] or arguably by the ancient Chinese or Venetians.

However, the paper bill of lading has not been without its drawbacks. It is slow, costly and open to widespread, forgery and fraud. How would e-bills work? Would they be better?

Electronic Bills of Lading – how might they work?

The phrase "electronic bill of lading" is sometimes used to refer to a "non-documentary" document, which is or may be intended to perform the functions traditionally performed by bills of lading and other non-negotiable shipping documents written or printed on paper[32]. Traditional concepts familiar to paper bills of lading such as "delivery", "endorsement", "possession" or being a "holder" of a bill are difficult to apply in relation to electronic bills of lading.

It is a common misconception to think of an "electronic bill of lading" as one document stored on a computer network or server and sent like an e-mail. This is not necessarily correct. It is a *series* of "messages" or "codes" or "keys" which together form the e-bill of lading.

(1) The carrier would enter the details of the cargo provided to him by the shipper into a database. The database would then be accessed at the destination port, where the carrier would be able to transmit details to the consignee.
(2) If and when the shipper wished to trade the cargo before it reached the destination port, the transfer would be done by way of a private key or electronic signature.
(3) Once the details had been entered into the database, the shipper would be provided with a private key. This key would enable the shipper to access the information stored regarding his shipment.
(4) If the shipper wished to transfer possession in the shipment then he would endorse the 'bill' by entering his private key and the transferee's details.
(5) His private key would then be invalidated and a new private key generated for the transferee. Each new key would be accessible by the carrier, who at the point of delivery would deliver the cargo to the party with the valid key.

A third party would control the functioning of the database and the interfaces with the database. This could either be an international organization or, more likely, a number of competing commercial databases (akin to 'servers' such as AOL, Compuserve, Netstra etc.). The major banks might do well to set up a joint system.

Different Systems/Experiments in Electronic Bills

There are two main impediments to the development of "electronic bills of lading":-

(1) Firstly, the cultural unwillingness of many in the commercial world to move away from paper-based documentation systems; and
(2) Secondly, the fact that unlike a paper document there is unlikely to be a single original or limited number of authentic copies of an electronic document unless non-alteration and the security of the electronic document can be assured.

[32] Carver Bills of Lading (2000) pages 415-416.

Whilst the cultural reluctance may be understandable and will simply have to change several different solutions are available in respect of the second issue of the authenticity and security of electronic documents.

A Registry System[33]

A registry system for bills of lading (whether for paper or electronic bills of lading) has not yet developed beyond the experimental stage. The idea is that a central registry should be established where a bill of lading will be deposited immediately by a shipper upon issue by a carrier. There are no further physical transfers of the document (whether paper or electronic) and all subsequent transactions are simply recorded at the registry including charges and other security interests. Clearly such a registration system has the advantage that no bills (whether paper or electronic) are in fact in circulation.

However it also has many disadvantages including:-

(1) Whether P&I clubs and banks have their interests protected?
(2) Who is to bear the costs of establishing and running the registry?
(3) Where would the registry be located - physically and in terms of law?
(4) What happens if registration fails either due to a failure to comply with formalities or on the part of the registry staff?

A Contractual System - the Bolero System[34]

The Bolero System was founded with

(1) The mission of facilitating international trade through electronic means;
(2) The role of providing a trustworthy central operator for the operation of the BOLERO system.

The centrepiece of the project was the testing of a commercial, legal and technical solution to provide an acceptable electronic equivalent to the negotiable bill A pilot scheme with 24 users in 5 countries was undertaken in 1995 and in 1998 Bolero International Limited was founded. A contractual Rulebook was released in September 1999. The Bolero system went live on 27th September 1999. The scheme of Bolero distinguishes between

(a) The text of the electronic Bolero bill of lading ("BBL") incorporating the terms of the contract of carriage and the issuing carrier's receipt for goods shipped; and
(b) The Title Registry record for the BBL.
(c) The concept of an endorsement or blank endorsement on the BBL and actually holding the BBL.

Once a carrier has issued a BBL the Title Registry will accept changes in holdership only at the instance of the existing holder. If the BBL is negotiable the Title Registry will only accept an endorsement by a holder provided no other user

[33] Originally a project sponsored by Intertanko and Chase Manhattan Bank.
[34] BOLERO originally stood for the European Union Commission's DG XIII's "Bills of Lading for Europe Project" and then "Bills of Lading Electronic Registry Organisation".

was named on the BBL as an order party. The holder of a blank BBL, an order party or a consignee, or a party who names itself holder to order in the case of a negotiable BBL is in a position to call for delivery of the goods to it. The Title Registry addresses an attornment notice to a user and the user is given an endorsement chain by the registry which will list the parties contracting to date with the carrier starting with the shipper. One of the problems identified in the early Bolero project is that the domestic law of some jurisdictions require assignments of contractual rights to be made in writing. Transfer of contractual rights and liabilities under Bolero is effected by way of novation. The pre-existing contract of carriage is cancelled and a new contract in identical terms is entered into between the carrier and the new consignee holder or holder to order. The BBL is at an end when the consignee holder or holder to order issues a surrender instruction. The electronic BBL system only operates between the close community of users of the Bolero system - if a non-Bolero user is to become a party to the contract the present holder must issue a switch to paper instruction to the carrier via the Title Registry and the BBL will be ended when the carrier issues a paper bill of lading that sets out the BBL text and the endorsement chain.

Bolero has the following additional facilities

(1) all communications between users are sent via a core messaging platform (CMP);
(2) the system uses software to authenticate the identity of the sender, guarantee non-alteration of any message or document including a BBL and confirms transmission and receipt of messages to sender and recipient.

However Bolero also has disadvantages. A traditional paper bill of lading has a document of title function, which transfers constructive possession of the goods by the simple transfer of possession of the bill (with some formalities). In the Bolero scheme constructive possession of the goods is in fact not transferred but instead a form of attornment by the carrier operates replacing the original contract of carriage with a new contract with different parties. This form of "transfer" of rights is subject to risks of delay, omissions or faults in transmission of electronic messages and to intervening events. The need for the carrier's attornment to achieve a transfer of constructive possession will prevent the BBL from becoming a document of title.

In English law (which has a fairly strict doctrine of privity) there are two additional disadvantages to the Bolero scheme, namely:-

(1) The multilateral contract between Bolero users confer contractual rights on those who were not members of the Bolero Scheme;
(2) No rights would be acquired under the newly enacted Contracts (Rights of Third Parties) Act 1999 since the third party beneficiary is unlikely to be sufficiently "identified" for the purposes of enforcing rights under the 1999 Act.

Electronic Bills of Lading Outside Bolero

Many individual groupage carriers issue transport documentation electronically to their customers and allow (contractually) their customers to transfer the right to

take delivery to new parties. These developments are largely being done on a one-to-one basis rather than as part of systematic legal infrastructure. However the Bolero system remains the only system in which bills of lading are being issued other than by the system's principal.

Does an Electronic Bill satisfy the functions of a Bill of Lading?

There can be little dispute that the information fed into a database would fulfil the first two traditional functions of a bill of lading.

(1) The Receipt Function
The information fed into the database as to quantity and condition of the cargo would amount to a receipt and the information, would be capable of being transmitted (or, even printed out).

(2) The Evidential Function
The information stored in the database would also be evidence of the contract of carriage, assuming that the authenticity of the information could be established and preserved.

(3) Document of Title.
However there are serious difficulties with the third function of the bill of lading as a document of title. Whilst practically the concept of private keys and electronic signatures could work to transfer title in practice - only one person would have the key at any one time - the transfer of title would not be recognised in English law, as it currently stands. A legislative solution to the issues raised by electronic bills of lading is required which would permit the recognition of electronic pulses or signals in place of writing.

Would e-bills be advantageous?

Aside from the potential legal difficulties in trading with the cargo prior to its delivery, there are some real advantages in employing electronic bills of lading instead of traditional paper bills of lading:-

Cost
UN/CEFACT released figures estimating that international trade transaction costs in the world amount to US$ 3 trillion per annum and that the figure could be reduced by up to 60% by the development of international e-trade (see UN/CEFAT[35] - Steering Group Press Release 3 April 2001). Although these figures were not limited to international trade by sea and although bills of lading are not the sole transport documents for marine transport, the figures indicate that using electronic bills of lading rather than paper bills of lading could bring about substantial savings. Digital transmission is generally considerably cheaper and more reliable than manual transmission by courier or agent.

[35] United Nations Economic Commission for Europe.

Fraud or forgery

The present system of paper bills of lading is open to fraud in a way in which electronic bills of lading would not. Carriers may be liable for innocent delivery of cargo against forged bills of lading[36]; and b the same token transferees and financial institutions may pay against fraudulent bills of lading[37]. A system of electronic bills of lading however, would reduce the possibility of (at least) the first type of fraud – using a mixture of public key infrastructure and private key infrastructure (PKI) to limit the number of documents in circulation and access to those documents, which are in circulation. In addition:

(a) Bills may be ante-dated - this might be avoided by the time-stamp on an electronic bill.
(b) Bills may misdescribe the goods shipped or received - this will not be affected by electronic bills.
(c) Bills may misdescribe the port of loading or destination - this again will not be affected by electronic bills.

New Terminology in respect of security in e-commerce

Public key infrastructure and private key infrastructure are each systems of cryptography providing variable levels of security. Cryptography and electronic signatures are important for electronic transactions.

- *Cryptography* is the science of codes and ciphers. Cryptography has long been applied by banks and government and is an essential tool for electronic commerce. Cryptography can be used as the basis of an electronic signature.
- *Encryption* is the process of turning normal text into a series of letters and/or numbers which can only be deciphered by someone who has the correct password or "key". Encryption is used to prevent others reading confidential, private or commercial data (for example an e-mail sent over the Internet or a file stored on floppy disk).
- An *electronic signature* is something associated with an electronic document that performs similar functions to a manual signature. It can be used to give the recipient confirmation that the communication comes from whom it purports to come from ("authenticity"). Another important use of electronic signatures is establishing that the communication has not been tampered with ("integrity").
- *Public key cryptography* is a form of cryptography that uses two distinct, but related, keys (known as a key pair): one key for "locking" a document, and a separate key for "unlocking" it. These keys are both large numbers with special mathematical properties.
- Public key cryptography can be used to provide an electronic signature: the *private key* (which is only known to its owner) is used as the "lock" to transform the data, by scrambling the information contained in it. The transformed data is the electronic signature, which can be verified by "unlocking" it with the *public key* of the person who signed it. Anyone with access to the public key can check the signature, so verifying that it was

[36] (see Motis Exports Ltd v Dampskibsselskabet af 1912 and Dampskibsselskabet Svendborg [1999] 1 Lloyd's Rep 837 and affirmed by the Court of Appeal at [2000] 1 Lloyd's Rep 211)
[37] (see Standard Chartered Bank v Pakistan National Shipping Corporation & Others (No. 2) [2000] 2 Lloyd's Rep 511)

signed by someone with access to the private key and also verifying that the content of the document had not been changed.

- Public key cryptography can also be used to keep a communication secret: in this case the keys are used the other way round. The person sending the message would use the public key of the intended recipient to "lock" the message. Now only the corresponding private key can be used to "unlock" the message. This is what the intended recipient would use to read it. A third party would not be able to read the message without access to the intended recipient's private key.
- Various organisations provide cryptography services, which include certifying the public key of an individual, managing encryption keys and time stamping electronic signatures - Bolero is only one of such organisations .

Speed

Instances of the cargo arriving before the bill of lading in the context of international carriage by sea are not common. However this situation is not unheard of. This situation can arise very easily in the context of the carriage of goods by air.

Without presentation of the bill of lading (in the context of sea carriage) or an air waybill (in the context of air carriage), carriers will sensibly not release the cargo to the owner and delay occurs. This is a particular problem where the goods are of a perishable nature or where the port of destination where bills are to be presented is inaccessible.

Are e-bills of lading viable?

Attempts to introduce the concept of electronic bills have not been met with overwhelming success to date. This has led many to doubt where there will ever be a significant role for electronic bills in carriage of goods by sea.

1990 CMI Rules for Electronic Bills of Lading

There is no central database for the storage of e-bills and ensuring their authenticity and integrity as envisaged as in the Bolero system. The responsibility for the administration f the system is placed on the carrier. Clearly such a system might be open to widescale fraud.

1996 Model Law

The Model law makes electronic signatures equally valid as written signatures.

Bolero.net

The requirement for an attornment by the carrier and the creation of new rights in a third party under the contract of carriage by a process of novation rather than a simple transfer of possessory and contractual rights by possession and endorsement of a paper bill requires two processes to achieve the same result as the endorsement or physical transfer of a paper bill of lading. The requirement of two processes leaves open the possibility of breach of contract by the carrier or of delay and mistake.

"Seadocs" - A Swedish project – Atlantic Container Line datafreight receipts system

The first electronic transport document used in shipping was a datafreight receipt. This document was strictly not a bill of lading but only a waybill. It saves time since the waybill is immediately sent to the carrier's computer terminal at the destination port and a copy printed off for the consignee. The system does avoid problems caused by the delay in the receipt of a document but it does not facilitate trading with the goods whilst in transit. Negotiability of e-documents is therefore a perennial problem.

The CMI draft Instrument

This attempts to facilitate (but only in a very limited way) the difficulty regarding electronic communications in relation to the transfer of the goods during transit.[38]

The CMI instrument does not however, fully cater for the introduction of e-bills as of yet since there are still difficulties with the terminology including that of whether a e-bill is in fact a "document"[39]. The current terminology used by domestic systems of law, the CMI and UNCITRAL including the terms "document", "holder", "transferor", "transferee", "receipt" and "transfer" requires root and branch revision[40]. In the shipping world and in the field of international carriage of goods by sea such will only be successful if a uniform approach to e-commerce is adopted world-wide.

Time for e(volutionary)-change?

Now is certainly the time for e-change. The CMI Draft Instrument – recognises this – makes provision to some extent for electronic commerce to be on the same footing as paper commerce in the context of "transport documents" for the international carriage of goods by sea. However, considerably more work needs to be done on the CMI draft instrument, if it is to be successful.

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[38] Article 2 provides:

"*Parties involved in the contract of carriage may agree that they communicate electronically. In such event, if there is an applicable legal requirement*

(i) *either expressly or by implication that certain information should be in writing, or that certain consequences should follow if it is not, such requirement is satisfied by the transmission, generation or storage of such information by electronic, optical or similar means, provided that such information is accessible so as to be usable for subsequent reference;*

(ii) *for a signature, or that certain consequences should follow if there is no signature, such requirement of a signature is met in relation to a date message, if an electronic signature is used which is as reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all the circumstances, including any relevant agreement.*"

[39] In English law it probably is a document -CPR Part 31.4 "'document' means anything in which information of any description is recorded".

[40] The distinguished former English commercial judge Anthony Diamond Q.C. delivered a stinging criticism to the ISC at a meeting on 16th-18th July 2001.

Increasing e-confidence in the UK

The United Kingdom has recently enacted the Electronic Communications Act 2000[41] in implementation of the European Union Electronic Signatures Directive 1999/93/EC.
The avowed purpose of the Act is to help build confidence in electronic commerce and the technology underlying it by providing for:

- an approvals scheme for businesses and other organisations providing cryptography services, such as electronic signature services and confidentiality services;
- the legal recognition of electronic signatures and the process under which they are verified, generated or communicated; and
- the removal of obstacles in other legislation to the use of electronic communication and storage in place of paper.[42]

Part II and Section 7 of the Act for the legal recognition of electronic signatures and the process under which they may be generated, communicated or verified. It will also facilitate the use of electronic communications or electronic storage of information, as an alternative to traditional means of communication or storage. It will be for the court to decide in a particular case whether an electronic signature has been correctly used and what weight it should be given (e.g. in relation to the authentication or integrity of a message) against other evidence. Some businesses may already have contracted with each other about how they are to treat each other's electronic communications - section 7 does not cast any doubt on such arrangements.

Increasing e-confidence in the USA

On 30th June 2000 President Clinton signed into law the Electronic Signatures in Global and National Commerce Act ("E-Sign") which came into effect on 1st October 2000[43]. The purpose of the Act was to remove barriers to conducting transactions in writing by electronic means. The Act is, as you would expect, smooth and attractively packaged and does give force to electronic signatures; however -

(1) it does not replace shipping documents such as bills of lading with electronic equivalents;
(2) it does not specify the technology which must be used to create legally enforceable signatures;
(3) it does give greater confidence to those using or receiving e-signatures.

[41] Royal Assent - 25th May 2000
[42] see explanatory notes to the Act.
[43] 15 USC 7001 *et seq*.

IV Multi-Modal Bills of Lading

If e-bills are advantageous in simple port to port shipments it is difficult to see why such e-documents should not be used in respect of other modes of international transport and/or in carriage of a multi-modal nature comprising a sea leg. Such multi-modal bills of lading and e-documentation may help create a single regime of liability in respect of such multimodal transport – e.g.:

(1) as is already the case to some extent under the Convention on the Contract for the International Carriage of Goods by Road ("CMR") in respect of ro-ro trailer-carried goods; and

(2) as would be the case under the United Nations Convention on International Multimodal Transport of Goods 1980 (which has not yet and is unlikely to come into force).

Negotiability of Air Waybills and CMR Consignment Notes

The speed of electronic bills of lading may be of an additional advantage when dealing with carriage of goods by air or road. International carriage by air is usually effected under an air waybill, which is habitually non-negotiable. International carriage by road is normally undertaken under a CMR consignment note. which again is non-negotiable At present negotiable bills do not normally exist in respect of carriage by air or road because of the speed of delivery of cargo as compared to delivery of a paper bill. However, instantaneous 'delivery' of electronic bill would provide opportunity to deal with the cargo whilst still aboard the aircraft or vehicle and might serve to render such documents negotiable.

A Single Regime for Multi-Modal Transport?

Multi-modal transport generally revolves around a container and documentation in relation to multi-modal transport generally comprises a multi-modal bill of lading. Thee were three stages in the development of contractual documentation in multi-modal transport[44]:

(1) The adaptation of traditional shipping documents to take account of supplemental modes of transport;

(2) The "first generation" container bills focusing on through liabilities and responsibilities outside the transport chain;

(3) The "second generation" container bills based on the Draft Convention on the Combined Transport of Goods 1971 ("TCM") seeking to harmonise contract terms so that operators from different starting points might compete at the same level.

Such bills however normally incorporate a segmented responsibility for different parts of the carriage and are entirely dependent on the terms agreed between the parties in respect of those different parts. This is exactly the same situation as that which faced the framers of The Hague Rules in respect of simpler port-to- port shipments.

[44] D.Yates (gen. ed.) Contracts for the Carriage of Goods (1993-2000) (looseleaf) 6-9.

The Hamburg Rules have simply avoided the conceptual difficulties caused by multi-modal transport by providing expressly[45] that the Hamburg Rules only relate to that part of the multi-modal carriage undertaken by sea. This is likely not only to fragment a single contract for the carriage of goods, but will inevitably lead to international fragmentation.

Conclusions

- As the 21st century dawns there could be no more appropriate time to achieve uniformity by sweeping away The Hague, the Hague-Visby and the Hamburg Rules and introducing a single convention based scheme of carrier/cargo liability.
- The time to press ahead with technological change in the field of carriage of goods is now.
- The time has come fully to integrate different modes of transport of goods and the laws governing them into a seamless e-web.
- Speed is of the essence.[46] The United States must be dissuaded from unilateral legislation and encouraged to participate in the production of a harmonised regime through CMI/UNCITRAL. The enactment of a new US legislation will have a heavy impact upon the delicate work of CMI and UNCITRAL, in the same way that the Harter Act itself acted as a catalyst for the production of the Hague Rules. There is, therefore, great international interest in the US reforms. It is hoped that the US has as much interest in the work of the international community in this field. It remains to be seen how internationalist the new President will be in this field.
- It is hoped that Professor Jan Ramberg's prediction[47] that the 20th century will come to be regarded as the heyday of uniformity by means of convention and that the 21st century will be regarded as the period in which parties to commercial transactions regained the right to choose their own (bespoke) legal solutions without governmental interference – will not come to pass.
- Whether the "prize" of uniformity, harmonization and global electronic compatibility in carriage of goods can be achieved in our working lifetimes remains to be seen.

Chc: MLAANZ: Sydney 2001

[45] (Article 1(6))
[46] See Professor Nicholas Gaskell (with Y. Baatz and R. Asariotis) Bills of Lading: Law and Contracts (LLP 2000) as amended for the latest looseleaf supplement for N. Gaskell, in D.Yates (gen. ed.) Contracts for the Carriage of Goods (1993-2000).
[47] In his 1992 Donald O'May Lecture at the Institute of Maritime Law, Southampton.