

**OCEAN BILLS OF LADING AND EDI: LEGAL PRECAUTIONS IN
PROCESSING A SHIPPING TRANSACTION WITHOUT PAPER**

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**1. RISK AND RESPONSIBILITY UNDER EDI:
THE ROLE OF INTERCHANGE AGREEMENTS**

Electronic Data Interchange or EDI has become the modern means of communications in international trade and transportation. Paper-based procedures are being abandoned in favour of electronic transactions. In the shipping world, ocean bills of lading are about to be replaced by tele-transmissions of data. The technical standards for such electronic interchange have been agreed internationally. The practices of Europe and North America have been harmonized. In short, there is a sea change in the processing of sea carriage now under way.

But new ways bring new risks and uncertainties. Can the shipping community be sure that its electronic transactions will be legally enforceable? If a failure occurs in an electronic interchange between the shipper and the carrier, who shall bear the resulting loss and how shall liability be ascribed? As the shipping industry begins to exploit the logistical advances offered by EDI, attention must also be given to the possibility of operational errors and systems failures. Even the most efficient and secure computer systems can and will break down, and many questions about the consequences may be expected to follow.

What legal principles will then apply? The newness of EDI ensures that there are no legal precedents for apportioning liability and a great deal of uncertainty in drawing legal conclusions by analogy from past, but dissimilar, paper procedures. In these circumstances, prevention, or at least prearrangement, of the foreseeable risks and losses is necessary to ensure the reliability that the shipping industry and its customers will need in using EDI. The need can be met in large part by the use of interchange agreements between the trading partners.

An interchange agreement (IA) is an arrangement that establishes the rules of conduct between the parties to EDI transactions. Its function is to dissolve or distribute the risks associated with the operation of EDI. Any pair of carriers and shippers can, indeed are advised, to write an IA before engaging in EDI and several samples are available for the purpose. The baseline standard has been drawn up by

a number of international bodies and promulgated by the International Chamber of Commerce¹ as the Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission, more generally known by its acronym, UNCID. In addition, a number of national EDI councils and associations have taken the initiative in drafting model IAs.² In this paper, reference will be made to the model agreements and guides published in Canada,³ United Kingdom,⁴ United States,⁵ and Australia,⁶ because they provide a useful basis for comparison as to the preferable way to handle the foreseeable risks of using EDI in ocean transportation.⁷

The paper will proceed first to outline the kinds of new legal risks⁸ that EDI poses to carriers and shippers together with the ways that suitable precautions may be taken through an IA. The paper will go on to discuss the allocation of liability for transactional default when the EDI system fails the parties, as well as the protections then available to them.

2. AVOIDANCE OF RISKS

The foremost effect of substituting EDI for the ocean bill of lading, and all the associated forms typically used in the performance of a carriage by sea,⁹ is the absence of any paper documents. As a result, a number of legal questions arise concerning the electronic equivalent of a signed, written producible record of contractual undertakings to move the cargo. In addition, the use of EDI poses new issues of contractual security and business confidentiality.

The kind of legal problem presented by the absence of documents can be illustrated by the familiar rule that the shipper may call for a bill of lading signed by the carrier¹⁰ and the cargo owner must present the properly negotiated bill to obtain delivery.¹¹ Though the functions which these rules are intended to effect (receipt for the goods, evidence of the carriage contract, and negotiation of the title to the cargo) can be replicated by EDI, how enforceable is the transaction if it lacks the legally mandated paper bill of lading? This is where an IA can help the parties. The shipper and carrier should agree in advance that replication of the functions of the ocean bill of lading by EDI will have the same legal effect as an original paper document. This agreement might spell out a number of particular applications.

First, the IA can specify that the parties agree to be bound by their electronic messages as fully as if they were committed to paper, and not to raise, by way of defence to any claim, objection to the lack of a written bill of lading.¹² What the IA cannot do is override a mandatory

rule of statutory law that demands a paper document, such as persisting government requirements for documentary records for customs, taxation or exchange control purposes. For instance, if the importing country demands to be shown the ship's manifest containing all the bills of lading for goods on board, the EDI system must issue print-outs of the appropriate documents at the appropriate time. Accordingly, the IA should also provide for the right of either party to call for a paper document, without interrupting the integrity of the electronic transaction between themselves, whenever local law and government requirements demand one.¹³

Secondly, the IA can usefully be made to bear the terms and conditions of carriage. EDI is very suitable for formalized communications of standard messages, but it is impracticable to use it for transmitting lengthy and technically detailed contractual terms of the sort typically found on the backside of a bill of lading. However, an electronic signal indicating the intention to incorporate the carrier's standard terms is easy to communicate by EDI. But how shall the shipper know what the carrier's terms are? The answer is to supply them in the IA, either by appending a printed set, or at least by indicating when and where they are readily available.¹⁴

Thirdly, while the lack of a signed carriage document when using EDI can be overcome very easily by various forms of electronic authentication of messages, the IA should still deal with the matter. It is wise to agree in advance about the method of authentication that will be employed in carriage transactions between the parties.¹⁵ It is also a good precaution mutually to accept in the IA that the application of the chosen system of authentication to a particular electronic message (such as the carrier's transmission to inform the shipper that the goods have been received and loaded on board ship) will render it as fully dependable in law against the sending party as if it had been committed to paper with a holograph signature.¹⁶

Lastly, the parties need to pay attention in the IA to the computerized records of their transactions. If a dispute about the carriage of the goods should subsequently occur, how will proof be made of the claim or its defense? It is not yet certain in most legal systems under what conditions evidence of computer records is admissible, if at all. The IA can circumvent this difficulty in advance by expressing the parties' agreement to the production of computer records as fully admissible proof between them of the terms and conduct of their electronic transaction.¹⁷

But the admission of evidence does not speak to its weight and credibility, and so the IA should go further still. Presumably, the carrier and the shipper, in setting

about using EDI, will have agreed on a compatible means of electronic communications,¹⁸ which will include, quite likely, the employment of the services of one or more third party commercial intermediaries or VANS.¹⁹ In doing so, they will also need to fix the standards of computer record keeping between them. They should agree as well about the kinds of logs, audit trails, or other tests that will be used to verify the working order of the computer systems and the accuracy of the records they generate.²⁰ When a VAN is also involved, it will additionally be necessary to have an understanding about the accessibility of the computer records of the third party network to both the carrier and the shipper. Having made these arrangements for the fluent conduct of their electronic transactions, it is only sensible for the parties to record them in an IA with their agreement that evidence produced from computers verified in these ways is not only admissible, but fully credible.²¹

Turning briefly to the business risks in using EDI, it is obvious that all shippers and carriers will be concerned about the confidentiality of their transactions. This concern has an intra- and extra- parties' dimension. Between the carrier and the shipper, agreement should have been reached about the degree of contractual security required and the electronic methods to be put in place to ensure it.²² If a VAN is used, it is even more important to establish the accessibility, and concomitant security of the data being held and transmitted.²³ All of these arrangements may conveniently be recorded in the parties' IA,²⁴ and thus become a readily referable and enforceable agreement as to the standards of conduct of their EDI operations.

The shipper and carrier must also accept that, external to their interests in confidentiality, third parties may have rights of access or control over the electronic data. The age of informatics has caused a good deal of new alarm about the creation and use of computer data banks. Governments have responded with a variety of laws to protect personal privacy and to control transborder data flows. While this legislation is generally devised so as not to interfere with genuine business communications, such as the EDI messages entailed in shipping goods between continents by sea, the carrier and the shipper have to be prepared to accept the risk of an intrusion. The confidentiality clauses in their IA, therefore, might include an excuse for their breach by one party where it is compelled to do so by the requirements of law.²⁵

3. ALLOCATION OF RESPONSIBILITIES

Having discussed very briefly the kinds of precautions that ought to be taken when operating by EDI, and the sorts of protection an IA can provide, it has to be recognized that electronic transactions, like any others, can and will fail. When they do, who bears the legal liability? Or to put the question in commercial terms, who is exposed to the business risk of transactional failure? It is not difficult to imagine a whole range of occasions when teletransmissions do not work out as they should.²⁶ Everything from equipment breakdown, software fault, and transmission failure to inaccurate operation and unauthorized use may occur. Perhaps the shipper did not receive a certain message sent by the carrier; perhaps the message arrived but the shipper did not read it in time; alternatively maybe the message was input but never transmitted by the carrier, or it was sent but was incorrectly addressed or formatted; perhaps the EDI system carried the message but its contents were incomplete or inaccurate, and so on.

It is good practice to reduce the frequency of exposure to the risks of such untimely, garbled, corrupted or failed transmissions by acknowledging receipt of all messages,²⁷ but there will still be important occasions when such precautions do not suffice. Then the carrier and the shipper will be acting under a misunderstanding about the transmission or contents of a message affecting their carriage transaction. Subsequently, when each party acts in reliance on different data, a dispute could well arise which the law will have to resolve.

Generally speaking, problems in the use of EDI are likely to result from operator error or computer malfunction in the sender's offices, or in the VAN or VANS if employed, or in the receiver's offices. In legal terms, the effects of a human error or a systems malfunction may not depend on where it occurred. Generally, in law, the party in default is held responsible for the consequences, but sometimes such an allocation of liability is not possible, or even desirable. Moreover, the contract between the parties may contain a clause that specifically shifts the risks of default. The electronic transmission of transport data, whether to create a carriage contract or to execute one already made, poses all these risks and legal uncertainties anew. Their possible resolution may be illustrated by analyzing the situation involving a human error or equipment failure in the EDI system in the process of making the carriage agreement.

In common law countries such as Canada and England, a contract is analyzed into an offer and an acceptance.²⁸ A good deal of negotiation may go on between the two parties,

but ultimately one will suggest terms (the offer) which the other will agree to (the acceptance). In marine transport, the shipper, or its freight forwarder, will open the transaction by inquiring about space for its cargo, but very quickly agreement will be reached on the basis of the carrier's published schedules and standard trading terms. Traditionally, this process of contracting has been carried out by telephone or by telex, or in writing, using a Booking Note. The law has developed criteria for determining when offers and acceptances are made, and thus when a contract is concluded, for each of these media. Now that the medium is changed and EDI is to be used to achieve a contract, a new legal situation has to be faced. One way to approach it is to consider whether the existing rules concerning contractual communications in person, or by telephone, telex or post, can be adapted to apply to EDI.

The basic rules of offer and acceptance suppose a stereotypic situation in which two people negotiate face to face. There is instantaneous two-way communication between them, so that offers, counteroffers and ultimately an acceptance of the last offer can flow between the two parties uninterruptedly. When the parties are not face to face and another medium is interposed between them to carry their messages, offer and acceptance may not be instantaneous. Special rules are then necessary about when a contract is concluded.

For instance, when an offer is sent by post, it is not considered effective until received for the obvious reason that its contents cannot be known to the recipient until that moment. But what should be the effect of the recipient's response in mailing an acceptance? It has long been the law in common law countries that from the moment an acceptance is put in the post, it is effective to conclude a contract.²⁹ This somewhat arbitrary rule reflects the reality that from this moment, both parties are agreed on the same terms, though one is not yet aware of the fact, and has the merit of supporting the commercial efficacy of the particular transaction and so of trade in general.

Use of the telephone to negotiate a contract presents a different set of circumstances. It is much more like the instantaneous two way communications of face to face negotiations, even though the actual words of the speaker are translated mechanically into electronic pulses and back again into words for the auditor. Consequently, the law has treated telephonic offers and acceptances as spoken messages effective upon receipt.³⁰

Transmissions by EDI lie somewhere between these two practices, having some features of both. EDI may, like the post, be established as a one way communication process, although it may also be set up with an automatic message

acknowledgement system which confirms receipt of an offer and, more importantly, of an acceptance. Alternatively, EDI can be likened to the telephone for its capability of near instantaneous speed of communications both back and forth.

Perhaps the medium of closest analogy is telex. It is a one way message carrier, -- two people cannot communicate by telex simultaneously as can two speakers by telephone, -- yet its transmissions are almost instantaneous. It was decided back in 1955 that the instantaneous character of telex transmissions outweighed other considerations of difference from the stereotypic face to face transaction and therefore the normal rule that a contract is concluded when the message is received was applied.³¹

The same approach could serve the purposes of EDI since it is similarly a one way yet nearly instantaneous means of communication. There are some disanalogies, however. First, though the sender's acceptance message arrives almost instantaneously upon transmission, the receiver may not receive it then because s/he happens or chooses not to open her/his electronic mail until some time later. More significantly, unlike telex, telephone or post, the receiver of an EDI transmission has to manipulate the medium in order to access the message. It does not arrive in human readable form: the addressee has to activate the EDI system in a selective fashion in order to extract the message. In other words, there is an opportunity, which is absent when using telex or even telephone or post, for the recipient or the computer equipment to inadvertently corrupt the message after receipt but before it is read. Furthermore, an automatic message acknowledgement system would not protect against this risk, since the problem would arise after the confirmation of receipt of the message had been communicated.

This risk of message corruption is greatly enhanced if the contracting parties communicate through VANS, which is highly likely. VANS are not simply carriers of messages, like the postal service; they also add value by collecting, collating and distributing data and passing it through a network of connections, which similarly manipulate it, in the course of making it available to the intended receiver. It is obvious that the longer the network of communications becomes, the greater is the chance of message corruption. Moreover, VANS typically accept only very limited liability for their activities. In particular, their service contracts usually exempt them from responsibility for all consequential damage, such as the breakdown of the underlying engagement for carriage. The risk of contract failure as a result of message corruption is therefore passed back to the shipper and the carrier.

In many instances, the corruption of the contents of a message will be evident and so the parties will communicate further. But sometimes the error may not be obvious, leading to serious differences in expectations. For instance, the carrier might read a message that leads it reasonably to believe no agreement has been reached yet the shipper, thinking it had communicated an acceptance, would be very upset when it presents the goods for carriage only to find they are shut out. Alternatively, the corrupted message might lead the parties to hold different views about the terms of carriage. Thus the carrier might think a certain freight rate was "agreed", but the shipper is surprised when charged at that rate, believing they had "agreed" to a different one.

If the approach to telex were also to be applied to EDI, a message of acceptance of carriage terms would only be effective on receipt. Hence, a message that is corrupted along the way before it reached the receiver would never be an effective acceptance and the risk of such failure would be on the sender. However, a message that is received but unwittingly corrupted by the receiver before it is read, poses a novel problem. It may be said that such an incident is the fault of the receiver, who should therefore bear the risk of any loss. The difficulty is that, although the message was intended as an acceptance of contractual terms, the receiver, on reading the corrupted version, would still think no agreement (or some different agreement) had been reached. Furthermore, it may be commercially impracticable, especially if VANS are involved, to trace the point of corruption and so to assign responsibility for the fault.

Perhaps in the last resort a relatively arbitrary rule will have to be made. If so, it would best be done by international agreement so as to be uniform worldwide. If not, a series of national courts in different countries will be invited to fix a rule under a variety of factual situations and then there is no guaranteeing they will all reach the same conclusion. Meanwhile, the contracting parties are not helpless: the shipper and the carrier can undertake damage control in their interchange agreement. Although the primary purpose of an IA is to make arrangements for the smooth application of EDI, it may also include clauses that deal with the breakdown of operations.

Following the ordinary legal approach to communications, the parties might agree to place the responsibility for a lost or corrupted message on the sender.³² They are free, however, to agree that the receiver should bear these risks. In any event, the two alternatives need not be mutually exclusive. Even if it is agreed the sender shall be liable for errors in communication, the receiver may still be expected to exercise care in handling incoming messages. By

5. ENDNOTES

¹Publication no. 452.

²There are also a growing number of more specifically tailored IAs being created by individual corporations, industries, and trade associations.

³EDI Council of Canada, Model Form of Electronic Data Interchange Trading Partner Agreement, 1990 (hereafter CAN.IA).

⁴EDI Association of United Kingdom, Standard Electronic Data Interchange Agreement, 1989 (hereafter UK.IA).

⁵American Bar Association, Model Electronic Data Interchange Trading Partner Agreement, 1990 (hereafter US.IA).

⁶EDI Council of Australia, EDI Control Guide, 1989 (hereafter AUS.Guide).

⁷It is important to realize that the IA should facilitate the application of EDI, but most emphatically, should not interfere with the terms or execution of the carriage contract itself.

⁸As with the introduction of any new technology, EDI also raises a host of practical considerations and new commercial risks, which are beyond the scope of this paper to discuss. See, e.g. Sokol, P.K., EDI, the Competitive Edge, (New York: McGraw-Hill Book Co., 1989) and Thomsen, H.B. and Wheble, B.S., Trading with EDI, the Legal Issues (London: IBC Financial Books Ltd., 1989).

⁹This paper refers to the bill of lading because it has long been the most important document in marine transport, but the effects of using EDI equally apply to all the other transactional messages and records that traditionally have been transmitted by paper.

¹⁰Hague/Visby Rules Art. III (3) and (7).

¹¹Glyn Mills Currie & Co. v. East & West India Dock Co. (1882), 7 App. Cas. 591; Sze Hai Tong Bank Ltd. v. Rambler Cycle Co. Ltd., [1959] A.C. 576 (P.C.).

¹²E.g., CAN.IA ss. 1.05 and 6.04; UK.IA s. 5.1; US.IA s. 3.3.

¹³See, e.g., Comité Maritime International, Rules For Electronic Bills of Lading, rule 10(e).

¹⁴E.g., CAN.IA ss. 1.01(i) and 6.03; US.IA s. 3.1.

¹⁵UNCID art. 6; CAN.IA s. 5.03; UK.IA s. 4; US.IA s. 1.5.

¹⁶E.g., CAN.IA s. 6.04; US.IA s. 3.3.2.

¹⁷E.g., CAN.IA s. 7.04; US.IA s. 3.3.

¹⁸UNCID art. 4; CAN.IA s. 3; UK.IA s. 2; US.IA s. 1.

¹⁹Value Added Networks, sometimes also termed Value Added Data Services (VADs).

²⁰UNCID art. 10; CAN.IA s. 7; UK.IA s. 7.

²¹E.g., CAN.IA s. 7.04; cp. US.IA s. 3.3.

²²UNCID art. 9.

²³E.g., UK.IA s. 8.

²⁴E.g., CAN.IA s. 5; UK.IA s. 3; US.IA ss. 1.4 and 3.2.

²⁵This concern might be dealt with in a more general force majeure clause.

²⁶See for further examples AUS. Guide s. 2.8.

²⁷The parties need to agree whether the receiver should merely acknowledge receipt of a message or should also confirm that its contents appear to be complete and correct, but without prejudice to any response to its substance. See UNCID arts. 7 and 8; CAN.IA s. 4.03; UK.IA s. 6; US.IA s. 2.2.

²⁸Consideration to support the promises of the two sides is also necessary.

²⁹Adams v. Lindsell (1818), 1 B. & Ald. 681, 106 E.R. 250 (K.B.); Cochrane v. McKay (1921), 61 D.L.R. 338 (N.S.C.A.). The UN Convention on Contracts for the International Sale of Goods, Art. 18, will change the rule in common law countries with respect to the formation of international sales contracts, but not carriage agreements.

³⁰Brinkibon Ltd. v. Stahag Stahl G.m.b.h. [1982], 2 W.L.R. 264 (H.L.).

³¹Entores Ltd. v. Miles Far East Corp., [1955] 2 Q.B. 327 (C.A.); Brinkibon Ltd., *ibid.*

³²E.g., CAN.IA s. 4.02; UK.IA s. 5.3.

³³Cf. CAN.IA s. 4.03; UK.IA ss. 5.3 and 6.3.

³⁴E.g., CAN.IA s. 8.01; US.IA s. 4.6. The parties might also add a force majeure clause to protect each of them from liability in the event of a total systems' failure beyond their individual control. Cp. CAN.IA s. 8.02 and US.IA s. 4.5.