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The Legal Acceptance of Electronic Documents, Writings, Signatures, and Notices in International Transportation Conventions: A Challenge in the Age of Global Electronic Commerce

Judith Y. Gliniecki
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I. INTRODUCTION

This century has witnessed spectacular growth in international trade. As a result, the need for international transportation services has correspondingly increased. Early in the century, it quickly became apparent that the diverse array of national laws regulating international transport services would inhibit rather than promote and expand international trade. Consequently, the international trading community has found it beneficial to develop uniform laws and rules governing international transportation and its required documentation. This law-making effort has resulted in an array of treaties, conventions, and model laws and rules, providing for uniform regulation of international transportation and related trade requirements such as customs.

By definition, an international trade transaction contemplates the movement of goods from one country to another.¹ This integral role that

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¹ Any international trade transaction involves the movement of one or more persons, capital, goods, or information. Gibbs and Hayashi, *Sectoral Issues and the Multilateral Framework for*

transportation plays in international trade transactions and the concomitant extensive documentation requirements inherent in transportation is responsible for the movement to promote uniform regulation governing transportation documents.² An important goal of these laws is to define the role of documents in the transportation process and the relative rights, obligations, and consequences associated with the use of the required documents. In many instances, compliance or deviation from the formalities required by these international rules in the preparation, signature, and delivery of written documents results in substantive legal consequences.

These legal consequences are also implicated in electronic commerce. As global electronic commerce continues to evolve, and more businesses adopt the exciting technologies that it offers, the ability to harmonize commercial practice with the formalities of international law becomes a necessity. For international transport, the harmonization process challenges the shippers, freight forwarders, and other parties involved in a shipment of goods to reconcile the uniformed discipline required to effectively move information electronically with the diverse local and international documentation requirements.

An important aspect of the harmonization process is the development of uniform, commercially-practical definitions of the required legal formalities that accommodate electronic messaging technologies. In today's world, where international transportation of goods has become increasingly multimodal in nature, uniformity of legal rules governing formalities is required not just for each mode of transportation, but also across different modes.³ Although each instrument (treaty, convention, model law or the like) usually pertains to a particular mode of transportation, the multimodal shipment of goods in an international trade transaction will likely implicate more than one instrument. Consequently, if electronic commerce—which depends on a high degree of standardized

Trade in Services: An Overview, in *Trade in Services: Sectoral Issues*, UNCTAD/ITP/26 (1989) at 25.

² Ritter, *The Legal Facilitation of International Electronic Commerce: Current Initiatives and Future Directions* (UNCTAD 1992) at 15 [hereinafter Ritter (1992)].

³ The fact that the international transportation of goods has become increasingly multimodal gains support from the international trading community's effort to develop a convention harmonizing rules for multimodal transport—the 1980 UNCTAD Convention on International Multimodal Transport of Goods. UNCTAD's effort resulted in a set of uniform rules governing liability pertaining to multimodal transportation of goods in international trade. A similar need exists for the harmonization of documentation requirements.

For further evidence of the complexity of the interrelationships generated by a single international trade transaction, and the resulting flow of required documentation, see ECE/TRADE WP.4/GE.2/85 (October 1991) at ¶¶ 13-15.

messages—is to be effectively realized, there is an urgent need for greater uniformity in the manner in which the applicable instruments treat electronically-generated formalities.⁴

The international trading community has recognized this need. Indeed, significant attention has already been paid to the development of legal definitions which accommodate electronic documents, writings, signatures, and notices.⁵ The sources of this attention have been governments as well as businesses and professional groups.

A testimony to the urgency of this international effort was the recent meeting in Vienna of a working group of the United Nations Commission on International Trade Law (UNCITRAL).⁶ The meeting addressed various legal aspects of electronic data interchange (EDI). Among the issues UNCITRAL discussed were the legal value of computer records, the formation of contracts by electronic means, whether or not UNCITRAL should elaborate its own standard EDI communication agreement given the fact that others already exist, and what role UNCITRAL should play in the elaboration of model statutory provisions to be recommended to governments for the facilitation of EDI.⁷

However, despite the considerable attention governments and busi-

⁴ For example, electronic data interchange (EDI) is the transmission in a standard syntax of unambiguous information between computers of independent organizations. Accredited Standards Comm. X 12, *Information Manual* (1991) at II - 1.

⁵ See, e.g., *Legal Aspects of Trade Data Interchange: Review of Definitions of "Writing", "Signature", and "Document" Employed in Multilateral Conventions and Agreements Relating to International Trade*, TRADE/WP.4/R.819 (1992); *Legal Aspects of Trade Data Interchange: Signature and Formal Requirements in Connection with the Replacement of Traditional International Trade Documentation by Computer Print-Outs*, TRADE/WP.4/R.398 (1985); *Dispensing with a Handwritten Signature in Invoices by Means of Computer Printouts*, TRADE/WP.4/R405 (1986); *Studies Concerning the Replacement of the CIM Consignment Note by an Instrument Suitable for Automatic Data Transmission - Docimel Project*, TRADE/WP.4/R.479 (1987); *Legal Aspects of Trade Data Interchange: Bills of Lading and Automatic Data Processing*, TRADE/WP.4/R.159 (1981); *Draft Recommendations on Signatures/Authentication in Trade Documents*, TRADE/WP.4/GE.2/R.111/REV.1 (1979); *Legal Problems and ADP Systems in International Trade*, TRADE/WP.4/GE.2/R.123 (1978); *Trade Data Interchange Restraints*, TRADE/WP.4/R.99 (1980).

⁶ UNCITRAL, Report of the Working Group on International Payments on the work of its Twenty-Fourth Session, A/CN.9/360 (17 February 1992) [hereinafter Vienna Report]. The following countries were represented at the meeting: Argentina, Canada, Chile, China, Cost Rica, Cuba, Czechoslovakia, Egypt, France, Germany, Hungary, Iran (Islamic Republic of), Italy, Japan, Mexico, Netherlands, Spain, United Kingdom of Great Britain and Northern Ireland, and the United States of America. Observers in attendance included: Algeria, Australia, Austria, Brazil, Finland, Indonesia, Lebanon, Oman, Paraguay, Peru, Philippines, Poland, Saudi Arabia, Sweden, Switzerland, Thailand, Tunisia, Uganda and Yemen.

⁷ See generally, Vienna Report, *supra* note 6; see also UNCITRAL, *Provisional Agenda of the Working Group on International Payments for its Twenty-Fourth Session*, A/CN.9/WG.IV/WP.52 (1991). For the mandate of UNCITRAL to engage in this law-making effort, see *Report for the United Nations Commission on International Trade Law: Electronic Data Interchange*, A/CN.9/350 (1991).

nesses have paid to the issue of legal definitions which accommodate electronic messaging technologies, much challenging work remains to be accomplished to fully convince businesses that fear of legal consequences should not deter their investment in electronic messaging technologies. One aspect of this challenge is assessing the requirements of current international law as a predicate to defining strategies for further harmonization of international trade rules with the migration of commercial practice towards electronic commerce. This paper is intended to contribute to that effort.

A. The Issues At Stake

In traditional paper-based commerce, formalities pertaining to manually-written documents, signature or notices are often required as forms of proof in disputes involving the validity or enforceability of commercial contracts. In the absence of such documents and authenticated signatures as proof of validity, a party's legal remedies are substantially impaired. A similar need for proof exists with electronic commerce.⁸ In the course of such commerce, disputes will occur requiring authentication and documentation of information movements to prove disputed issues. Yet, if current requirements for paper-based, manually-written documents, notice and signature are maintained, the potential of electronic commerce will not be reached. Further, advances in accuracy, speed, and efficiency resulting from electronic commerce will be lost. Currently, governments and businesses are trying to both enhance these existing paper-based legal requirements to accommodate technological change as well as develop new, alternative rules where existing rules cannot be enhanced to accommodate technological change.

The development of these alternatives has been complicated by governments' concern about how these new technologies will impact on their ability to enforce legal requirements through traditional, mandatory evidentiary records retention. However, this concern may be exaggerated.⁹

Aside from the issue of enforcement, a more fundamental issue, with

⁸ One study has already reviewed the legal and evidentiary requirements for electronic commerce in the European common market nations. TEDIS, *The Legal Position of the Member States with Respect to Electronic Data Interchange* (Commission of the European Communities, 1989) [hereinafter TEDIS].

⁹ UNCITRAL has come to the conclusion that, on a global level, there are fewer problems than expected in cases of data stored in computers as evidence in litigation. A more serious problem in the use of electronic technologies in international trade arises out of the requirement that documents must be signed or must be in paper form. UNCITRAL, *Report by the Secretariat, Legal Value of Computer Records*, A/CN.9/265 (1985). UNCITRAL also made the following recommendations to governments:

The United Nations Commission on International Trade Law,

which businesses as well as governments are concerned, is how electronic technologies will impact upon traditional reliance on these requirements to achieve other goals, such as having reliable evidence of a transaction. These evidentiary issues are not purely legal. Important business considerations are also served by proper resolution of evidentiary requirements.¹⁰ For example, with respect to authentication, the admissibility of an electronic message and its legal validity are enhanced when the originator of a message and the message's integrity can be proven. But an important business consideration — assuring the source and integrity of information upon which a company can then justifiably rely — is also served by proper authentication procedures.

These issues dealing with formalities, combined with the need for uniformity in international trade rules governing transportation documentation discussed above, form the crux of the current challenge facing the international trading community as it moves toward global electronic commerce.

B. Framework of Analysis

This paper surveys a number of international transportation conventions with respect to their treatment of electronic means as acceptable methods of generating documents. In addition, this paper looks at the

1. *Recommends to Governments:*

(a) to review the legal rules affecting the use of computer records as evidence in litigation in order to eliminate unnecessary obstacles to their admission, to be assured that the rules are consistent with developments in technology, and to provide appropriate means for a court to evaluate the credibility of the data contained in those records;

(b) to review legal requirements that certain trade transactions or trade related documents be in *writing*, whether the written form is a condition to the enforceability or to the validity of the transaction or document, with a view to permitting, where appropriate, the transaction or document to be recorded and transmitted in computer-readable form;

(c) to review legal requirements of a *handwritten signature* or other paper-based method of authentication on trade related documents with a view to permitting, where appropriate, the use of electronic means of authentication;

(d) to review legal requirements that documents for submission to governments be in writing and manually signed with a view to permitting, where appropriate, such documents to be submitted in computer-readable form to those administrative services which have acquired the necessary equipment and established the necessary procedures;

2. *Recommends to international organizations elaborating legal texts related to trade to take account of the present Recommendation in adopting such texts and, where appropriate, to consider modifying existing legal texts in line with the present Recommendation.*

Official Records of the General Assembly, Fortieth Session, Supplement No. 17 (A/40/17), ¶ 360 (1985)(emphasis added).

¹⁰ See Ritter, *supra* note 2, at 39-46; see also Amelia H. Boss, *The Proliferation of Model Interchange Agreements*, in Final Program of Proceedings of the 3rd International Congress of EDI Users, 4-6 September 1991 (IDEA 1991), at 538; see generally Michael S. Baum, Amelia H. Boss, Thomas J. McCarthy, Philip Otero, and Jeffrey B. Ritter, *The Commercial Use of Electronic Data Interchange - A Report and Model Trading Partner Agreement*, 45 Business Lawyer 1645 (June 1990) [hereinafter ABA Report]. Benjamin Wright, *The Law of Electronic Commerce - EDI, Fax and E-Mail: Technology, Proof and Liability* (Boston 1991).

methods of satisfying the applicable formalities of writing, signature, and notice. The following conventions will be considered:

1. International Convention for the Unification of Certain Rules Relating to Bills of Lading "Hague Convention" (1924) (Rules for the carriage of goods by ship);
2. Protocol to Amend the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading Signed at Brussels on 25 August 1925 "Hague-Visby Protocol" (1968) (Rules for the carriage of goods by ship);
3. United Nations Convention on the Carriage of Goods by Sea 1978 "Hamburg Convention" (1978) (Rules for the carriage of goods by ship);
4. Convention for the Unification of Certain Rules Relating to International Transportation by Air "Warsaw Convention" (1929) (Rules for the carriage of goods and passengers by air);
5. Additional Protocol No. 3 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air Signed at Warsaw on 12 October 1929 as Amended by the Protocol Done at the Hague on 28 September 1955 and Guatemala City on 8 March 1971 "Protocol No. 3" (1975) (Rules for the carriage of goods and passengers by air);
6. Montreal Protocol No. 4 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air Signed at Warsaw on 12 October 1929 as Amended by the Protocol Done at the Hague on 28 September 1955 "Protocol No. 4" (1975) (Rules for the carriage of goods and passengers by air);
7. UNCTAD Convention on International Multimodal Transport of Goods "Multimodal Transport Convention" (1980) (Uniform rules governing liability pertaining to international multimodal transportation);
8. Inter-American Convention on International Carriage of Goods by Road "Inter-American Convention" (1989) (Uniform rules governing the negotiability of bills of lading);
9. Convention on the Liability of Operators of Transport Terminals in International Trade "Terminal Operators Convention" (1991) (Uniform rules governing liability of persons taking charge of goods for transportation);
10. Convention on a Common Transit Procedure Between the EEC and the EFTA Countries "EEC/EFTA Transit Convention" (1987) (Rules for the carriage of goods in transit);
11. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal "Basel Convention" (1989) (Rules governing the international movement and disposal of hazardous wastes).

The survey is intended to be a practical review of how these conventions and instruments have approached the issue of legal acceptance of electronic messaging. Although the authors extrapolate some conclusions, this paper is not intended to be an in-depth theoretical analysis.

Rather, the authors hope that this analysis will provide impetus for further discussion in the international arena on the subject of why these issues have been treated as they have. Ultimately, the authors hope that such efforts may contribute to current legal reform efforts which seek to harmonize the international legal rules with the emerging commercial practices of electronic commerce.

The analysis begins in Part II with a discussion of the strong relationship between progression in time, and the level and types of acceptance of electronic means within the conventions. The authors have drawn some general conclusions from this relationship.

Part III presents an analysis of the four different types of clauses discussed in this paper — document clauses, writing clauses, signature clauses, and notice clauses. This analysis, which seeks to explain the differences in levels of electronic acceptance between the different types of clauses, also examines the underlying functions of the formalities embodied in each of these clauses.

Part IV presents a more detailed analysis of the language used to define formal requirements for writings, documents, and signature through an analysis of the development of uniform international rules governing ocean bills of lading and air transportation documents. This section discusses the possible significance of language used, and how such language promotes or hinders electronic commerce.

The paper concludes with the authors' recommendations concerning the future direction of efforts to facilitate electronic commerce and to harmonize international trade rules with the emerging migration towards electronic commerce. An annex of the relevant treaty provisions discussed in the article is attached.

II. PROGRESSION IN TIME

A. Methodology

As we discussed in the introduction, international transportation of goods has become increasingly multimodal in nature. Since international transportation treaties tend to pertain to particular modes of transport, the shipment of goods in an international trade transaction is likely to implicate more than one of the conventions analyzed in this paper. Consequently, if electronic commerce — which depends on a high degree of standardized messages — is to be effectively realized, there is a need for greater uniformity across the conventions in the manner in which they treat electronically-generated formalities. In order to assess the present level of such uniformity and to assess the possibilities for future reform,

Diagram A

Convention and Date	Type of Clause and Level of Electronic Acceptance				Type of Body	
	Document	Writing	Signature	Notice	Governmental	Non-Governmental
Hague 1924	L ₁ Writing presumed			L ₀ Writing required		CMI ¹
Warsaw 1929		L ₁ Writing presumed	L ₁ May print or stamp	L ₀ Writing required	ICAO ²	
Hague-Visby 1968	L ₁ Writing presumed			L ₀ Writing required		CMI
Protocol No. 3 1975	M Any means but must preserve record				ICAO	
Protocol No. 4 1975	M Any means but must preserve record		L ₁ May print or stamp		ICAO	
Hamburg 1978		M ₀ Telex, telegram accepted as writing	M Any means but local opt-out	M ₀ Writing required but defined as including telex, telegram	UN ³	
Multimodal Transport 1980		M ₀ Telex, telegram accepted as writing	M Any means but local opt-out	M ₁ Writing required but defined as including telex, telegram	UNCTAD ⁴	
EEC/EFTA Common Transit 1987			M Any means; explicitly automated systems, but need administrative permission		EEC ⁵ (Regional Group)	
Inter-American Carriage of Goods 1989	M ₁ Any means that recover information		M Any means but local opt-out		OAS ⁶ (Regional Group)	
Basel - Hazardous Waste 1989				L ₀ Writing required	UNEP ⁷	
Terminal Operators 1991	H Any form preserving information; explicitly recognizes EDI		M Any means but local opt-out		UNCITRAL ⁸	

¹Comité Maritime International

²International Civil Aviation Organization

³United Nations

⁴United Nations Conference on Trade and Development

⁵European Economic Community

⁶Organization of American States

⁷United Nations Environment Program

⁸United Nations Commission on International Trade Law

the authors have employed a methodology which demonstrates, across the treaties, the levels of acceptance of electronically-generated means of satisfying the applicable formal requirements.

Diagram A charts the conventions, in chronological order, by the level of electronic means accorded to each type of clause, and by the type

of parties concluding the agreement.¹¹ The levels of electronic acceptance in these agreements vary from zero to very high. The lowest level of acceptance is an explicit requirement that the required formalities must be manually written; the highest level allows the formalities to be satisfied through any means, including electronic. The various levels of acceptance of electronic means were graded as follows:

1. *Low Category*

- L₀ - denotes the lowest level of acceptance - explicit paper-based writing requirements.
- L₁ - denotes implicit¹² paper-based writing requirements - this is a slightly greater level of acceptance because the writing requirement is not explicit and there is thus more room for an argument that non-paper-based means may also be employed in satisfaction of applicable requirements.

2. *Medium Category*

- M₀ - denotes acceptance of telex and telegram as acceptable means— although these means have an electronic component, the end result is, nevertheless, paper-based.
- M - denotes acceptance of “any means,” including electronic, but provides an opt-out if the means are inconsistent with national laws, or, demands that the means employed be capable of being reproduced in “tangible” form, or, requires administrative permission for electronic issuance.
- M₁ - denotes acceptance of “any means,” including electronic, but without the restrictions imposed by the M subcategory above.

3. *High Category*





- H - denotes not just specific and explicit acceptance of electronic means, but also strong encouragement and promotion of such means, especially electronic data interchange (EDI) and other computer-based technologies.

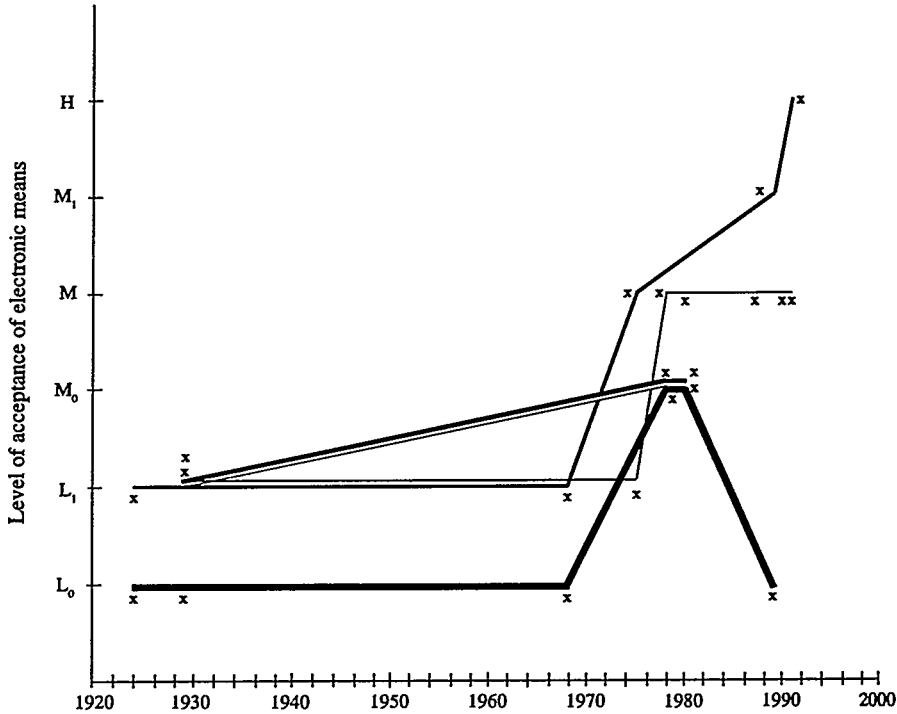
The information from Diagram A was used to plot the graph in Diagram B. Progress in time by years for each type of formal requirement was plotted against the level of acceptance of electronic means as categorized in Diagram A. It should be noted that the authors

¹¹ The chart summarizes the type of language used in each clause. For the full text of the language actually employed, *see* Annex.

¹² The term “implicit” denotes those types of treaties where no mention is made of media, but where the language of the treaty presumes paper. In the Warsaw Convention, for example, Art. 6(2), provides that in the context of air waybills, “The third part shall be signed by the carrier and handed by him to the consignor after the goods have been accepted.” Clearly, this language does not specify the medium in which the air waybill is to be issued. However, in 1929, the presumption must have been that it would be paper-based.

Diagram B

Notice 
 Writing 
 Signature 
 Document 



do not claim that this methodology represents a rigorous scientific approach. Nevertheless, the methodology provides a basis from which certain conclusions can be drawn.

B. Time Correlation

Diagram B illustrates a clear increase in the level of acceptance of electronic means over time. This increase is characteristic for all four types of clauses, though the notice graph defies this trend after 1988.

The explanation for this general trend is simple. Electronic technology has become more accessible over the years. In the 1920's when the Hague Convention and the Warsaw Convention were signed, there was a negligible electronics industry, and computer technology was non-existent. As Diagram B suggests, the largest advances in electronic and computer technology were made in the 1970's and 1980's. These advances in

technology and their successful commercial applications, partly explain why subsequent treaties increasingly responded to, and attempted to accommodate, electronic documents, writings, signatures and notices. However, the advances in technology made during this period were not the sole cause of the upward trend in Diagram B. The important factor was that as technology advanced, commercial practices began to migrate towards electronic commerce. This migration sensitized the drafters of these instruments to the necessity of legally accommodating the new commercial practices.

The earliest language contemplating electronic means appears in 1971 with the Guatemala Amendments to the Warsaw Convention, and in 1975 with the further amendments embodied in Protocols No. 3 and 4. The provisions in these amendments were the first among the treaties and conventions to introduce the language "any other means." Thus, Protocol No. 3 provides, with respect to the issuance of a passenger ticket, that:

Any other means which would preserve a record of the information indicated in a) and b) of the foregoing paragraph may be substituted for the delivery of the document referred to in that paragraph.¹³ [emphasis added].

Protocol No. 4 also contains a similar provision with respect to air waybills for cargo:

Any other means which would preserve a record of the carriage to be performed may, with the consent of the consignor, be substituted for the delivery of the air waybill. If such other means are used, the carrier shall, if so requested by the consignor, deliver to the consignor the receipt for the cargo permitting identification of the consignment and access to the information contained in the record preserved by such other means.¹⁴ [emphasis added].

These amendments to the Warsaw Convention contemplate, for the first time, the idea that an electronic document may be employed.

By the late 1970's, and certainly in the 1980's, the "any other means" language was standard language in nearly all of the treaties developed. However, examples of this language are only found with respect to document and signature clauses. This language is not used with respect to writing and notice clauses. The Inter-American Convention document clause, for example, reads:

If the shipper so agrees, a non-negotiable bill of lading may be issued and, for that purpose *any* mechanical or electronic *means* that records the infor-

¹³ See, e.g., Protocol No. 3, art. 3(2), art. 4(2) 22 I.L.M. 23 (1983); see also Protocol No. 4, art. 5(2) 22 I.L.M. 23 (1983).

¹⁴ Protocol No. 4, art. 5(2) 22 I.L.M. 23 (1983).

mation stipulated in Article 5 may be used.¹⁵ [emphasis added].

An example of a signature clause containing the “any other means” language is found in the Hamburg Convention:

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.¹⁶ [emphasis added].

Finally, in the late 1980’s, the treaties became more explicit in their acceptance of electronic means. However, like the “any other means” language discussed above, the greater and more explicit acceptance of electronic means does not hold for all four types of clauses. Indeed, only the document clauses contain highly explicit language which specifically advocates the use of EDI and other computer-based technologies. For example, the Terminal Operators Convention explicitly authorizes the use of EDI for the issuance of documentation:

A document referred to in paragraph (1) may be issued in any form which preserves a record of the information contained therein. When the customer and the operator have agreed to communicate electronically, a document referred to in paragraph (1) may be replaced by an equivalent *electronic data interchange message*.¹⁷ [emphasis added].

C. Notice Graph

As Diagram B shows, document clauses demonstrate a higher level of acceptance of electronic means than any other type of clause. Notice clauses command the lowest level of acceptance. The reasons for these differences are discussed in Part III, although one observation with respect to notice clauses demands recognition at this point. The dramatic change in the notice graph after 1980 from a level of M_0 to L_0 defies the general upward trend. This change represents the explicit manual writing requirements for notice stipulated by Article 6 of the Basel Convention. This dramatic reversal can be illustrated by comparing the notice provisions of the Basel Convention to those of the two conventions represented before it on the graph — 1978 Hamburg Convention and the 1980 Multimodal Transport Convention.

Article 19, the notice provision of the Hamburg Convention, provides:

¹⁵ Inter-American Convention on Contracts for the International Carriage of Goods by Road, July 15, 1989, art. 4, 29 I.L.M. 83 (1990) [hereinafter Inter-American Convention].

¹⁶ United Nations Convention on the Carriage of Goods by Sea, March 31, 1978, art. 14(3), 17 I.L.M. 608 (1978) [hereinafter Hamburg Convention].

¹⁷ Convention on the Liability of Operators of Transport Terminals in International Trade, April 17, 1991, art. 4(3), 30 I.L.M. 1503 (1991) [hereinafter Terminal Operators Convention].

1. Unless notice of loss or damage, specifying the general nature of such loss or damage, is given *in writing*. . .¹⁸ [emphasis added].

* * *

5. No compensation shall be payable for loss resulting from delay in delivery unless a notice has been given *in writing*. . .¹⁹ [emphasis added].

Article 24 of the Multimodal Transport Convention provides:

1. Unless notice of loss or damage, specifying the general nature of such loss or damage, is given *in writing*. . .²⁰ [emphasis added].

* * *

5. No compensation shall be payable for loss resulting from delay in delivery unless notice has been given *in writing*. . .²¹ [emphasis added].

However, both the Hamburg and Multimodal conventions define writing as including “*inter alia*, telegram and telex.”²² Therefore, “notice in writing” means that notice may be given by way of telegram or telex. As a result, the notice provisions of the Hamburg Convention and the Multimodal Transport Convention are placed in the M_o category. In contrast, the Basel Convention’s explicit manual writing requirements place it in the L_o category.

The difference in the functions of the conventions provides a possible explanation of the drop from M_o to L_o. The purpose of the Hamburg Convention was to unify and modernize the rules governing the carriage of goods by ship in order to promote international trade.²³ This is clearly an attempt to promote commerce. Similarly, the purpose of the Multimodal Transport Convention was to promote international trade by resolving legal uncertainties in the area of liability pertaining to international multimodal transportation.²⁴ On the other hand, the purpose of the Basel Convention was to achieve the safe and effective regulation of transboundary movements of hazardous wastes and their disposal. Thus, the Basel Convention’s primary purpose was regulatory, not commercial.²⁵

As such, the change from M_o to L_o may be explained by the fact that treaties seeking to promote international commerce are more likely to be sensitive to the promotion of technologies with commercial applications

¹⁸ Hamburg Convention, *supra* note 16 at art. 19(1).

¹⁹ *Id.* at art. 19(5).

²⁰ United Nations Conference on Trade and Development: Convention on International Multimodal Transport of Goods, June 10, 1980, art. 24(1), 19 I.L.M. 938 (1980) [hereinafter Multimodal Transport Convention].

²¹ *Id.* at art. 24(5).

²² See Hamburg Convention, *supra* note 16 at art. 1(8); Multimodal Transport Convention, *supra* note 20 at art. 1(10).

²³ See Annex at 3.

²⁴ See Annex at 8.

²⁵ See Annex at 14.

than are treaties which are purely regulatory. This should not suggest that the use of electronic information technologies in the regulatory environment cannot reach the prominent place it enjoys in the commercial environment. Rather, this analysis merely suggests the likely levels of sensitivity to technology issues, given the underlying purpose of a treaty.²⁶ Therefore, it is reasonable to anticipate that non-commercial conventions, with primarily non-commercial purposes, are likely to be less sensitive to the acceptance of electronic means of satisfying required formalities than treaties with primarily commercial purposes.

D. Nature of Parties Concluding Instrument

The conclusion reached in the preceding section led the authors to explore several other questions. First, does the level of electronic acceptance increase when the parties to the transactions covered by a convention are commercial actors rather than governmental actors? And, second, are there any differences that can be discerned among governmental actors?

Intuitively, one would expect that commercial actors would be more willing to accept electronic means to promote commerce than would governments. Looking to the conventions surveyed, only two—the Hague Convention and the Hague-Visby Convention—were concluded by non-governmental actors. This does not present enough evidence from which to draw a general conclusion, particularly because these two conventions represent older treaties concluded when electronic technology was still in its infancy. Nevertheless, it is instructive that there are several non-transportation international trade treaties drafted by commercial actors which do not exhibit any substantial differences with respect to acceptance of electronic means when compared to governmentally-concluded treaties.

For example, the Uniform Customs and Practices for Documentary

²⁶ On a more general level, the relationship between regulatory purpose and acceptance of electronic means is much more complicated than is perhaps suggested. As is shown by the EEC/EFTA Transit Convention, regulatory conventions may also exhibit relatively high levels of acceptance of electronic means. Note, however, that the EEC/EFTA Transit Convention, is also commercially-based because, though regulatory in nature, its central purpose is to simplify and transform current regulations with a view to promoting international trade.

By contrast, even with commercially-based treaties, regulatory considerations may have a limiting effect on the acceptance of electronic means. For example, the opt-out provision in the Vienna Convention, Article 96, allowing contracting states to opt-out of the more liberal requirements of Article 12 and to insist that a contract of sale must be in "writing," was included precisely to accommodate regulatory considerations. Alejandro M. Garro, *Reconciliation of Legal Traditions in the UN Convention on Contracts for the International Sale of Goods*, 23 *International Law* 443 (1989) [hereinafter Garro].

Credits (U.C.P.) is the product of a commercially-oriented entity, the International Chamber of Commerce (ICC).²⁷ Yet, the high frequency of acceptance of electronic means in its provisions with respect to documents does not differ from treaties concluded by governmental entities such as UNCITRAL.²⁸ Both treaties have a high level of acceptance for electronically-issued documents. Therefore, the nature of the parties, whether commercial actors or governmental actors, does not appear to have significant influence on the level of acceptance of electronic means. Rather, it appears that the decisive factor is whether or not the underlying function and purpose of the convention is primarily commercial.

With respect to governmental actors, Diagram A demonstrates the striking fact that both of the regional conventions analyzed — the EEC/EFTA Transit Convention and the Inter-American Convention of the Organization of American States —demonstrate higher levels of electronic acceptance. The relatively higher levels of acceptance in the regional treaties may be explained by the fact that regional governments, with clear economic integration goals, are more likely to embrace technologies that will facilitate trade between them than would be the case with global treaties where the goals of economic integration and trade are less defined.²⁹

As Diagram B demonstrates, the acceptance of electronic means varies by type of clause. Document clauses are at the higher end, while notice clauses are at the very low end. Further, it may be the case that a convention whose underlying purpose is primarily regulatory will be less sensitive to the adoption of electronic means of satisfying formal legal requirements. Finally, it appears that the level of acceptance of elec-

²⁷ Uniform Customs and Practices for Documentary Credits (Int'l Chamber of Com., Pub. No. 400 (1983)). The ICC is currently working on a revision of the U.C.P. to be published as Pub. No. 500.

²⁸ ICC Pub. No. 400. Compare U.C.P. Art. 22(c):

Unless otherwise stipulated in the credit, bank will accept as original documents produced or appearing to have been produced:

- i. by reprographic systems;
- ii. by, or as the result of, automated or computerized systems;
- iii. as carbon copies, if marked as originals, always provided that, where necessary, such documents appear to have been authenticated;

and UNCITRAL's Terminal Operators Convention, Art. 4(3):

A document referred to in paragraph (1) may be issued in any form which preserves a record of the information contained therein. When the customer and the operator have agreed to communicate electronically, a document referred to in paragraph (1) may be replaced by an equivalent electronic data interchange message.

²⁹ "As the Commission of the European Communities' White Paper on Completing the Internal Market repeatedly makes clear, the unimpeded flow of information between economic operators and community member status is a sine qua non of freedom of movement for goods and services and the growth of cooperation between businesses across Europe." TEDIS, *supra* note 8 at 295 ¶706.

tronic means, excluding the time variable, is not dependent on the nature of the parties concluding the treaty. Rather, the nature of the underlying purposes of the treaty will be the primary determinant of the level of acceptance. Of these three conclusions, the last two are somewhat intuitive. However, our first conclusion — variation by type of clause in acceptance of electronic means — requires further inquiry.

III. DISCUSSION OF THE VARIOUS TYPES OF CLAUSES

Depending on the type of formality involved, the implementation of language that is facilitative of electronic commerce in multilateral treaties has varied. For example, requirements for documents tend to be more liberal than those for writing, notice, or signature. The formal requirements governing the movement of information in international transportation can have a great impact on electronic commerce. The efficient use of electronic commerce depends on a legal structure that permits the same message to be used validly by all participants in the trade transaction.³⁰ Thus, the early conventions' goal of avoiding conflicting national requirements becomes a matter of the utmost importance when applied to electronic commerce. Moreover, since international transportation has become increasingly multimodal, uniformity across the conventions is a necessity. Electronic commerce loses most of its advantage over paper when an electronic message must meet differing formality requirements. Under the current menagerie of international transport conventions, the requirements for formalities vary. A brief discussion of why these differences exist is useful to illustrate both the trends in the language used in setting forth the requirements of these formalities, and the hindrances that future treaty drafters may encounter.

A. Document

Document clauses define the elements required for the formation of a legal "document" which is to be used for a specific purpose. A document clause defines what information must be included in the "document," as well as the media in which the "document" should be issued. For example, under Protocol No. 3, a baggage check, issued separately from a document of carriage, shall contain the following information:

- a) an indication of the places of departure and destination;
- b) if the places of departure and destination are within the territory of a single high contracting party, one or more agreed stopping places being within the territory of another state, an indication of at least one such

³⁰ See generally, ABA Report, *supra* note 10.

stopping place.³¹

Additionally, the media in which the baggage check may be issued is defined as:

Any other means which would preserve a record of the information indicated in a) and b) of the foregoing paragraph may be substituted for the delivery of the baggage check referred to in that paragraph.³²

Thus, "document" is an extremely flexible concept. It is merely the expression of the current legal rules governing a particular transaction. This flexibility has resulted in the higher degree of acceptance of electronically-issued documents compared to other formalities. It should be recognized that this may be because document clauses may serve both an administrative and legal purpose. They often include information that supports administrative functions rather than the establishment of legal requirements. For example, the information required by the document clause of Protocol No. 3, Art. 4(1), discussed above, is primarily administrative. Airlines and administrative agencies of governments need to keep records of places of departure and destination. There is no inherent legal purpose underlying the requirement of such information; it is merely for administrative housekeeping purposes.

In contrast, Art. 4(2) is an example of a document clause that has an underlying legal purpose. This article establishes what form of media is legally acceptable for the issuance of a baggage check. As long as the legal rules governing a transaction recognize the validity of electronic commerce, it naturally follows that the formal embodiment of those rules in a definition of "document" is also recognized.

B. Writing

The underlying purpose of writing provisions has been defined as: "to provide that a document would be legible by all; to provide that a document would remain unaltered over time; to allow for the reproduction of a document so that each party would hold a copy of the same data; to allow for the authentication of data by means of a signature; and to provide that a document would be in a form acceptable to public authorities and courts."³³

One rationale supporting the formalities of writing is to discourage reliance on oral agreements. Oral agreements are not permanently recorded and can lead to serious problems in the event of disputes. This results from the absence of a record of past acts, transactions, and agreements. Paper-based transactions have also endured because of governmentally-

³¹ Protocol No. 3, *supra* note 13, at art. 4(1).

³² *Id.* at art. 4(2).

³³ Vienna Report, *supra* note 6, at Part III.A, ¶ 11.

required recordkeeping for the discharge of administrative requirements involving taxation, customs, etc.³⁴

Despite the usefulness of this formality, traditionally it has not been required to the exclusion of other evidence of an act, transaction, or agreement. In common law countries where requirements for writing may exist in the context of sales of goods, a writing is loosely defined as anything that contains the essential elements of the contract.³⁵ Under civil law regimes, a writing is merely treated as better evidence than the lack of any writing.³⁶

Under the most liberal definition, a writing may consist of a message that is capable of becoming paper-based. As expressed in the Hamburg Convention, "writing includes, *inter alia*, telegram or telex."³⁷ The fundamental issue of whether the term "writing", despite its historical connotation of paper, is broad enough to encompass electronic messages has been largely circumvented in recent treaties. Under the most progressive multilateral treaties, the issue of whether a writing may include electronic commerce has been avoided by defining document in such a way that a "writing" is not a requirement. The Terminal Operators Convention, for example, defines the media in which a document may be issued as:

A document . . . may be issued in any form which preserves a record of the information contained therein. When the customer and the operator have agreed to communicate electronically, a document . . . may be replaced by an equivalent electronic data interchange message.³⁸

Thus, the perceived connotation of paper in connection with the term "writing" has led convention drafters to avoid the use of the term in order to facilitate electronic commerce. Therefore, "writing" has not witnessed the progression that the term "document" has.

C. Signature

The purpose of signature clauses is to establish the types of identifying characteristics such as writings, symbols, markings, etc., which will be acceptable as authentic identifiers of a person producing a document or writing. Signatures are used to establish the validity and authenticity of documents, writings, and notices. Another function of signature clauses is to show that the person sending or producing information approved of the content of the document in the form in which it was issued

³⁴ See generally Ritter, *supra* note 2; Garro, *supra* note 26.

³⁵ ABA Report, *supra* note 10, at 1683-84.

³⁶ See generally TEDIS, *supra* note 8.

³⁷ Hamburg Convention, *supra* note 16, at Art. 1(8).

³⁸ Terminal Operators Convention, *supra* note 17, at art. 4(3).

and sent.³⁹

Signature is a difficult concept to adopt into electronic commerce. The technology available provides for the possibility of a unique electronic signature; however, concerns over authenticity remain paramount.⁴⁰ These concerns stem from the ability of computers to rapidly produce identical copies. The formality of a signature is imbued with a sense of uniqueness that makes it presumptively attributable to one source. Thus, the ability of computers to produce an identical set of symbols leads to concerns of fraud, both in business (for example, falsified purchase orders) and in law (for example, reduced ability to prove a forgery).

No provision of any treaty yet drafted permits an electronic signature without some qualification. The hesitancy in obliterating the concept of a handwritten signature as an authentication device is understandable. It is an accepted concept in both the legal and business communities because of its traditional use. But tradition should not be used to ignore reality. If authentication and identification are the driving force behind signature requirements, advances in the ability to produce unique "electronic signatures" that are as reliable as handwritten signatures should be recognized as legitimate.⁴¹

In considering the validity of non-manual signatures, it should be noted that the development of alternative media in lieu of handwritten signatures has not always lagged behind the development of other formalities. The fact that signature requirements are less progressive than document requirements is somewhat of a turn-around from paper-based commerce. Both the Warsaw and Hague Conventions permitted either handwritten or mechanically-produced (stamped or printed) signatures. This was an obvious recognition of the commercial impracticability of requiring handwritten signatures on every bill of lading or air waybill. Yet, signature requirements currently may be the single greatest obstacle to electronic commerce. Even the most progressive treaties contain a local-out option in the requirements for a signature, which sounds a potential death knell for electronic commerce transactions.⁴² A local-out option on a signature requirement can negate the potential for any electronic commerce in which a signature is needed because it is impossible to have a manual signature on an electronic message. Aside from the

³⁹ *United States v. Tuteur*, 215 F.2d 415, 417 (7th Cir. 1954). See generally ABA Report, *supra* note 10.

⁴⁰ Baum, *Information Technology and the Law* 126 (2d ed. 1990).

⁴¹ *Id.*

⁴² See generally Terminal Operators Convention, *supra* note 17; Inter-American Convention, *supra* note 15.

physical impossibilities of manual signatures on electronic messages, the local opt-out inhibits electronic commerce in a more subtle fashion. Because of the availability of the local opt-out, national law-makers are not challenged to adopt laws that respond to the migration toward electronic commerce. Rather, they can choose the easier path of following tradition. Thus, even in progressive treaties which have taken strides toward the acceptance of electronic commerce, the local opt-out for signatures has become a refuge for reactionary thought.

D. Notice

Notice has also been a difficult issue. Notice is "information concerning a fact, actually communicated to a person, or actually derived by him from a proper source."⁴³ The notice provisions of these conventions essentially establish what media are acceptable for the transmission of notice. Most notice requirements demand a writing. If the treaty has previously defined a writing in an electronically-permissive manner, this is not a concern. Often, writing has not been defined in an electronically-permissive manner, and notice is presumptively a paper-requirement. The heart of the issue of notice is the ability to bind another party. Both parties seek the most secure method for determining what rights have been preserved and asserted through notice. Parties' confidence in the accuracy of computers must increase before electronic notice is widely accepted.

The historical and currently perceived function of formalities has an important effect on their adaptability to electronic commerce. The advent of electronic commerce has challenged, and will continue to challenge, the validity of these formalities. As we discussed in the context of "writing", the difficulties in adapting the term to include electronic messages has led to an avoidance of its usage. Undoubtedly, as electronic commerce becomes the norm, the function of other legal formalities must evolve to include electronic means.

IV. AIR TRANSPORTATION DOCUMENTS AND BILLS OF LADING

Air transportation documents and bills of lading constitute two of the earliest expressions of unified international commercial rules. It is therefore appropriate, as an illustration of the ideas stated in the preceding sections, to examine in greater detail the evolution of the rules for carriage of goods. The Warsaw Convention (signed in 1929)⁴⁴, gov-

⁴³ Vienna Report, *supra* note 6, at Part III.D., ¶ 12.

⁴⁴ See Annex at 4.

erning air waybills and passenger and baggage tickets, and the Hague Convention (signed in 1924)⁴⁵, governing ocean bills of lading, were both codified in an era during which paper was the sole medium of international commerce. Since the enactment of these conventions, the rules governing air waybills and bills of lading have been altered both through the amendment of these conventions and by the adoption of new conventions. Yet both types of documents have retained their vitality as society has moved from the age of industry to the age of information. Each expression of the rules is a product of the prevailing thought of its day. By viewing the transformation of the rules in each case we can perhaps gain some insight into the relationship of the non-commercial factors that interact with commercial reality to produce a system of rules.

The air waybill is essentially a receipt, given by the carrier to the shipper, that contains particular information concerning the goods in the shipment. This receipt is not the contract for shipment, but a declaration of the goods being shipped. The Warsaw Convention specifically states that the absence of an air waybill "does not affect the existence or validity of the contract of carriage, which shall nonetheless be subject to the rules of the Convention."⁴⁶ The Warsaw Convention also governs tickets for passengers and their baggage. These also serve as a contract for carriage, and the absence of a document (presumed to be on paper) does not affect the determination of the existence of a contract for carriage.⁴⁷

The bill of lading functions both as evidence of the contract for carriage of goods and as a receipt for the goods.⁴⁸ However, there is no affirmative requirement for paper in this contract. The Hague Convention declares the issuance of a bill of lading to be solely up to the shipper's discretion.⁴⁹

A. Air Transportation Documents

The Warsaw Convention has been revised in three protocols: Hague (1955), Guatemala City (1971), and Montreal (1975)⁵⁰. Writing requirements for passenger and baggage tickets were amended in the Guatemala

⁴⁵ See Annex at 1.

⁴⁶ Warsaw Convention, Annex at 4.

⁴⁷ Warsaw Convention, Annex at 4. As will be discussed later, this does affect the ability of the carrier to claim limitation of liability.

⁴⁸ For example, the Hamburg Convention defines a bill of lading as "a document which evidences a contract of carriage by sea and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking." Hamburg Convention, *supra* note 16, at art. 1(7).

⁴⁹ Hague Convention, Annex at 1.

⁵⁰ See Annex at 5 and 6.

City Protocol, and these were incorporated into the amendments to writing and signature requirements of Montreal Protocol No. 3. Because the Guatemala City and the Protocol No. 3 are both products of the early 1970's, and Guatemala City was incorporated into the Protocol No. 3, we will address these amendments and the amendments implemented by Protocol No. 4, relating to air waybills collectively as the "Montreal Protocol". The essential focus of the amendments made by the Montreal Protocol was to permit the information required for a passenger ticket, baggage ticket, or air waybill to be preserved by means other than the making of a passenger ticket for which one copy is given to the passenger, and one is retained. The amendments allow that "any other means which would preserve a record of the information. . . may be substituted" for the ticket or air waybill. However, no substitution is permitted for an air waybill in paper form if the substituted means can not be accepted at the "points of transit and destination".⁵¹

The inhibitive effect of this provision is arguably equivalent to the local-out option in the Multimodal Transport Convention⁵² or the Hamburg Convention⁵³. If a country, either by law or by lack of technology, cannot accept the substituted means, then a paper document must be used.

With respect to the requirements for tickets or air waybills, a fundamental question exists as to whether the requirements for paper, or for its substitute, truly has any meaning in light of the Montreal Protocol. Section 3 of Article 3 and Section 3 of Article 4 state:

Non-compliance with the provisions of the foregoing paragraphs shall not affect the existence or the validity of the contract of carriage, which shall, nonetheless, be subject to the rules of this Convention including those relating to limitation of liability.

Article 9 contains substantively the same language. If one of the major commercial premises of the Convention is to limit the exposure of the airline to huge tort awards in the event of an accident, then this provision negates any rationale for a ticket or air waybill. Under the Warsaw Convention as originally drafted, the limitation of a liability provision was inapplicable where the airline accepted a passenger or baggage without a ticket or cargo without an air waybill.⁵⁴ The Montreal Protocol completely reversed this rule, and provided a liability limitation in the absence of an air waybill or a ticket. If a ticket or an air waybill becomes a document without any practical legal consequences for the holder, the

⁵¹ Protocol No. 4, Annex at 6.

⁵² See Annex at 7.

⁵³ See Annex at 3.

⁵⁴ See Annex at 4.

Convention has done the least it could do in allowing for a substitute for paper-based, record-keeping requirements.

B. Bills of Lading

Modern international rules governing bills of lading were first codified in the Hague Convention, which was amended by the Visby Protocol⁵⁵, signed in 1968. Two additional conventions have promulgated unified rules for bills of lading: The Hamburg Convention (signed 1978)⁵⁶ and the Inter-American Convention (adopted 1989)⁵⁷. The Hamburg Convention, like the Hague Convention, concerns bills of lading for carriage of goods by sea; whereas, the Inter-American Convention covers carriage of goods by road. Despite the differences in transport means and the risks associated therewith, the underlying document, the bill of lading is the same for the purposes of this article.

Each of these conventions has a different level of acceptance for electronic documents. The Hague Convention contains no specific requirement as to the media in which a bill of lading is to be issued. The question then arises as to whether the absence of any specific reference thereto would prevent an electronically-issued document from fulfilling the requirements of proper documentation so as to bring the particular transport transaction under the unified rules of the Hague Convention. A recent study conducted by the International Sub-committee of Comité Maritime International (CMI) examined the language of the official French text of the Hague Convention to determine the applicability of the rules to current commercial practice. The committee determined that:

If the suggested interpretation of the words "tout autre document similaire formant titre pour le transport" is accepted, the Hague-Visby rules would not apply only in case no document is issued, e.g., because it is replaced by electronic data interchange (E.D.I.).⁵⁸

In response to the need for guidance which has been underscored by the study of the International Sub-committee, the CMI has recently issued Rules for Electronic Bills of Lading. In general, this study concluded that a convention which does not specifically permit the use of electronic commerce may, potentially, mean that such activity falls outside of the

⁵⁵ See Annex at 2.

⁵⁶ See Annex at 3.

⁵⁷ See Annex at 8.

⁵⁸ "Uniformity of the Laws of the Carriage of Goods by Sea in the Nineteen Nineties: Problems of the Hague-Visby Rules and Possible Solutions." Report on the International Sub-committee to Comité Maritime International (1990) UNIF-17-III-90 at 14.

scope of the convention. This conclusion may be of value in considering the level of acceptance of electronic commerce in other conventions.

The Hamburg Convention contains a compromise recognition of electronic commerce. It uses language and concepts similar to other late 1970's United Nations treaties; most particularly, the United Nations Convention on Contracts for the International Sale of Goods (Vienna Convention)⁵⁹ and the UNCTAD on International Multimodal Transport Convention.⁶⁰ The definition of a writing in several treaties developed during this period now "includes *inter alia* telex or telegram". Thus, the presumption is in favor of a document that is capable of becoming and does become paper-based. The signature requirement goes further to expressly recognize electronically-produced signatures. However, this apparent advance is undermined by opt-out language permitting the local law of the country of issuance to override this provision and require a handwritten and/or other manual form of signature.

Among the treaties discussed in this section, the Inter-American Convention is the most facilitative of electronic commerce. For the writing requirement, electronic means are specifically referenced; thus, an electronic document may clearly constitute a bill of lading under this Convention. However, even this Convention is not without qualifications. The signature requirement remains identical in substance to that of the Hamburg Convention. For example, Inter-American Convention reads in Article 5 Section 1:

These signatures may be handwritten or made by any mechanical or electronic means if this is not inconsistent with the laws of the country where the bill of lading is issued.

Whereas, Article 14 of the Hamburg Convention provides:

The signature on the bill of lading may be in handwriting, printed on 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.

The question then, as discussed in Part III, is how can there be an electronic document with a manual signature? The potential for this conflict implies that even under the more facilitative rules of the Inter-American Convention, a paper-based document may still be a practical requirement.

Certain themes that were discussed earlier in this paper are evident

⁵⁹ This convention, entered into in 1980, is an example of a convention, not involving transportation, that uses similar language.

⁶⁰ Even the introduction of computer services such as Prodigy, which allow the subscriber to make reservations on-line from his or her personal PC, will not change the designation of the passenger as a non-commercial participant under this analysis.

when examining air waybills, tickets, and bills of lading. First, the strong time correlation is seen in the level of acceptance for electronic means of commerce in the treaties governing bills of lading. The absence of a mention of proper media found in the Hague Convention (1924) and even in the Visby Protocol (1968) has given way to a specific recognition of electronic commerce in 1989 with the Inter-American Convention. Second, a slight correlation is seen in the function of the document. Electronic records could substitute for a paper document, in the context of an air waybill, a few years before such recognition was made for bills of lading. However, in viewing separately Protocols No. 3 and No. 4, this correlation becomes almost non-existent. Protocol No. 4, which dealt with air waybills, was written in 1975. The Hamburg Convention was signed in 1978. Three years is less a correlation than a quirk of fate. However, the correlation might be found in the parties involved in the relevant transactions. As was discussed earlier, the Guatemala Protocol recognized non-paper means of record keeping in the context of passenger tickets and baggage tickets. In the passenger and baggage ticket transaction, there is, usually, one commercial participant and one non-commercial participant.⁶¹ It is striking that the first recognition of non-paper means of record keeping in commercial transportation treaties occurs when the commercial participant gains (by having Warsaw liability limitations apply in the absence of a ticket) through the alleviation of a paper requirement and the only potential loser is a non-commercial participant.

V. CONCLUSION

As is evident from the survey of rules concerning international trade transactions, the current patchwork does not satisfactorily accommodate the migration of international business to electronic commerce. The conventions we have examined in this article all contain various rigidities in their definitions of applicable legal requirements that are inhibitive of electronic commerce. However, the decided trend in the language of the treaties has been to increase the recognition of electronic commerce. One

⁶¹ The potential for further marginalization of developing countries remains of great concern. See generally, Trade and Development Report, 1988, at 173-84, 257-262, UNCTAD/TDR/8 (1988); *Accelerating the Development Process, Report by the Secretary-General of UNCTAD to UNCTAD VIII*, at Para. 19, TD/354 (1991); Pipe, *Telecommunications Services: Considerations for Developing Countries in Uruguay Round Negotiations*, in Trade in Services: Sectoral Issues, at 49-111, UNCTAD/ITP/26 (1989); See also Bressand, *Access to Networks and Services Trade: The Uruguay Round and Beyond*, in *Id.*; *Follow-Up and Review of the Implementation of the Final Act of UNCTAD VII, The Problematics of Trade in Services and Technological Change*, at Para. 74-79, TD/B/1241 (1990).

needs only to view Diagram B to see this progress. Nevertheless, there is room for improvement.

Naturally, in the effort to draft electronically-permissive language in multinational treaties, care should be taken to keep the language media-neutral. Electronic commerce shows great potential for all commercial participants, but no party should be penalized under a multilateral treaty for its preference of paper or technological inability to use electronic messaging.⁶² In promulgating international commercial rules that are sensitive to electronic commerce, the drafters should endeavor to be over inclusive, so that both technologically advanced and less advanced parties may participate in international commerce under the same legal regime.

The importance of conducting global commerce under the same legal regime must not be overlooked. If one accepts that the elimination of barriers, including legal barriers, to international trade is, and has been, a factor in the phenomenal growth of international trade in this century, then these efforts at unification of international law must be encouraged. With the advent of the information age and the migration toward electronic commerce, media-neutrality is necessary for continued efforts in the expansion of global trade. However, to be truly media-neutral, any proposed definition of the formalities of document, writing, signature or notice should recognize the formality as valid in any form in which it is generated, provided the purposes underlying the need for the formality are preserved. For example, if the central purpose of a document is to preserve a record of act, transaction, event, etc., then any media that would reliably preserve such a record should be legally permissible.

However, achieving media-neutrality will not by itself solve the problem of harmonizing the legal requirements of transportation agreements to current commercial practices employing electronic technologies. Given the varied and complex interactions that are involved in a transaction comprised of international transportation of goods⁶³, it becomes clear that any reforms aimed at legally harmonizing electronic commerce must recognize that greater uniformity in applicable legal formalities is required across the various treaties, conventions, or agreements that regulate different aspects of an international trade transaction. Such uniformity is especially required because the benefits that are derived from electronic messaging accrue in substantial measure

⁶² See generally, Ritter (1992), *supra* note 2, at 10-14; ECE/TRADE/WP.4/GE.2/85, *supra* note 3, at para. 13-15.

⁶³ See generally, Ritter, *supra* note 2.

from standardized messages and commercial practices. Legal definitions in various international trade agreements—agreements which in today's complex web of international trade often interact with each other—must thus achieve increased uniformity to reflect the type of uniformity which is occurring in commercial practice.

Additionally, for electronic commerce to be fully functional, national laws that permit use of electronic technologies will have to be adopted. Several nations have begun working on uniform rules governing electronically-based transactions.⁶⁴ However, in the interim, the promulgation of agency-specific rules governing the receipt and recordation of electronic messages to fulfill various reporting requirements would facilitate the current and future utilization of these technologies.⁶⁵

The codification of multilateral uniform rules for commercial transactions has gained momentum in the last ten years. The number of treaties that have been concluded, even within the last five years, is unprecedented. In this same time period, much attention has been paid to the language used to define document, writing, signature, and notice. These trends are not mutually exclusive; rather, the two validate each other. As commercial practice increasingly becomes electronic, there is a need to promulgate new legal standards where traditional paper based notions no longer reflect the commercial practices being standardized by the commercial participants in response to the new technologies. As increased attention is paid to the promulgation of uniform rules, the drafters are forced to analyze more carefully the relationship of the uniform rules to the evolving reality of electronic commerce. The confluence of these trends is a validation of electronic commerce. Having been validated, the facilitation of electronic commerce must become a priority through the amendment and adoption of multilateral treaties and national laws.

⁶⁴ See, e.g., IRS Rev. Proc. 91-59 and, generally, Ritter, *supra* note 2.

⁶⁵ See generally Ritter, *supra* note 2.

ANNEX

TEXT OF DOCUMENTS, SIGNATURE, WRITING AND
NOTICE CLAUSES OF TREATIES SURVEYED

I. *INTERNATIONAL CONVENTION FOR THE UNIFICATION
OF CERTAIN RULES RELATING TO BILLS OF LADING
(HAGUE CONVENTION)*

1. Status

Signed at Brussels 25 August 1924. Entered in force 2 June 1931.

2. Purpose

To promulgate rules for the carriage of goods by ship, in particular, the responsibilities of the parties and the information that should be contained in a bill of lading.

3. Note should be taken of the following provisions:

Article 3

3. 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:

(a) The leading marks necessary for identification of the goods as the same are furnished in writing by the shipper before the loading of such goods starts, provided such marks are stamped or otherwise shown clearly upon the goods if uncovered, or on the cases or coverings in which such goods are contained, in such a manner as should ordinarily remain legible until the end of the voyage;

(b) Either the number of packages or pieces, or the quantity, or weight, as the case may be, as furnished in writing by the shipper;

(c) The apparent order and condition of the goods.

* * *

6. Unless notice of loss or damage and the general nature of such loss or damage be given in writing to the carrier or his agent at the port of discharge before or at the time of the removal of the goods into the custody of the person entitled to delivery thereof under the contract of carriage, such removal shall be prima facie evidence of the delivery by the carrier of the goods as described in the bill of lading.

If the loss or damage is not apparent, the notice must be given within three days of the delivery.

The notice in writing need not be given if the state of the goods has at the time of their receipt been the subject of joint survey or inspection.

In any event the carrier and the ship shall be discharged from all liability in respect of loss or damage unless suit is brought within one year after delivery of the goods or the date when the goods should have been delivered.

In the case of any actual or apprehended loss or damage the carrier and the receiver shall give all reasonable facilities to each other for inspecting and tallying the goods.

II. ***PROTOCOL TO AMEND THE INTERNATIONAL CONVENTION FOR THE UNIFICATION OF CERTAIN RULES OF LAW RELATING TO BILLS OF LADING SIGNED AT BRUSSELS ON 25 AUGUST 1925 (HAGUE-VISBY PROTOCOL)***

1. Status

Signed at Brussels 23 February 1968. Entered into force 23 June 1977.

2. Purpose

Same as Hague Convention.

3. Comment

The Hague-Visby Protocol does not alter any of the writing requirements contained in the Hague Convention.

III. ***UNITED NATIONS CONVENTION ON THE CARRIAGE OF GOODS BY SEA 1978 (HAMBURG CONVENTION)***

1. Status

Signed 30 March 1978. Entry into force scheduled for 1 November 1992.

2. Purpose

Same as Hague Convention.

3. Note should be taken of the following provisions:

Article 1

8. "Writing" includes, *inter alia*, telegram and telex.

Article 14

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 incon-

sistent with the law of the country where the bill of lading is issued.

Article 19

1. Unless notice of loss or damage, specifying the general nature of such loss or damage, is given in writing by the consignee to the carrier not later than the working day after the day when the goods were handed over to consignee, such handing over is *prima facie* evidence of the delivery by the carrier of the goods as described in the document of transport or, if no such document has been issued, in good condition.

* * *

5. No compensation shall be payable for loss resulting from delay in delivery unless a notice has been given in writing to the carrier within 60 consecutive days after the day when the goods were handed over to the consignee.

IV. *CONVENTION FOR THE UNIFICATION OF CERTAIN
RULES RELATING TO INTERNATIONAL TRANSPORTA-
TION BY AIR (WARSAW CONVENTION)*

1. Status

Signed 12 October 1929. Entered into force 13 February 1933.

2. Purpose

To set limitations on the liabilities of airline carriers resulting from injury to passengers or their baggage or from damage to cargo.

3. Note should be taken of the following provisions:

Article 3

1. For carriage of passengers the carrier delivers a passenger ticket. . . .

2. The absence, irregularity or loss of the passenger ticket does not affect the existence of the validity of the contract of carriage, which shall none the less be subject to the rules of this Convention. Nevertheless, if the carrier accepts a passenger without a passenger ticket having been delivered he shall not be entitled to avail himself of those provisions of this Convention which exclude or limit liability.

Article 4

1. For the carriage of luggage, other than small personal

objects of which the passenger takes charge himself, the carrier must deliver a luggage ticket.

2. The luggage ticket shall be made out in duplicate, one part for the passenger and the other part for the carrier.

* * *

4. The absence, irregularity or loss of the luggage ticket does not affect the existence or the validity of the contract of carriage, which shall none the less be subject to the rules of this Convention. Nevertheless, if the carrier accepts luggage without a luggage ticket having been delivered, or if the luggage ticket does not contain the particulars set out at (d) (f) and (h) above, the carrier shall not be entitled to avail himself of those provisions of the Convention which exclude or limit his liability.

Article 6

1. The air consignment note shall be made out by the consignor in three original parts and be handed over with the goods.

2. The first part shall be marked "for the carrier," and shall be signed by the consignor. The second part shall be marked "for the consignee"; it shall be signed by the consignor and by the carrier and shall accompany the goods. The third part shall be signed by the carrier and handed by him to the consignor after the goods have been accepted.

3. The carrier shall sign on acceptance of the goods.

4. The signature of the carrier may be stamped; that of the consignor may be printed or stamped.

5. If, at the request of the consignor, the carrier makes out the air consignment note, he shall be deemed, subject to proof to the contrary, to have done so on behalf of the consignor.

Article 8

The air consignment note shall contain the following particulars:

(a) The place and date of its execution;

(b) The place of departure and of destination;

(c) The agreed stopping places, provided that the carrier may reserve the right to alter the stopping places in case of necessity, and that if he exercises that right the alteration shall not have the affect of depriving the carriage of its international character;

(d) The name and address of the consignor;

(e) The name and address of the first carrier;

- (f) The name and address of the consignee, if the case so requires;
- (g) The nature of the goods;
- (h) The number of the packages, the method of packing and the particular marks or numbers upon them;
- (i) The weight, the quantity and the volume or dimensions of the goods;
- (j) The apparent condition of the goods and of the packing;
- (k) The freight, if it has been agreed upon, the date and place of payment, and the person who is to pay it;
- (l) If the goods are sent for payment on delivery, the price of the goods, and, if the case so requires, the amount of the expenses incurred;
- (m) The amount of the value declared in accordance with Article 22 (2);
- (n) The number of parts of the air consignment note;
- (o) The document handed to the carrier to accompany the air consignment note;
- (p) The time fixed for the completion of the carriage and a brief note of the route to be followed, if these matters have been agreed upon;
- (q) A statement that the carriage is subject to the rules relating to liability established by this Convention.

Article 9

If the carrier accepts goods without an air consignment note having been made out, or if the air consignment note does not contain all the particulars set out in Article 8 (a) to (i) inclusive and (q), the carrier shall not be entitled to avail himself of the provisions of this Convention which exclude or limit his liability.

Article 26

1. Receipt by the person entitled to delivery of luggage or goods without complaint is *prima facie* evidence that the same have been delivered in good condition and in accordance with the document of carriage.

2. In the case of damage, the person entitled to delivery must complain to the carrier forthwith after the discovery of the damage, and, at the latest, within three days from the date of receipt in the case of luggage and seven days from the date of

receipt in the case of goods. In the case of delay the complaint must be made at the latest within fourteen days from the date on which the luggage or goods have been placed at his disposal.

3. Every complaint must be made in writing upon the document of carriage or by separate notice in writing despatched within the times aforesaid.

4. Failing complaint within the times aforesaid, no action shall lie against the carrier, save in the case of fraud on his part.

V. ***ADDITIONAL PROTOCOL NO. 3 TO AMEND THE CONVENTION FOR THE UNIFICATION OF CERTAIN RULES RELATING TO INTERNATIONAL CARRIAGE BY AIR SIGNED AT WARSAW ON 12 OCTOBER 1929 AS AMENDED BY THE PROTOCOL DONE AT THE HAGUE ON 28 SEPTEMBER 1955 AND GUATEMALA CITY ON 8 MARCH 1971 (PROTOCOL NO.3)***

1. Status

Signed on 16 October 1975.

2. Purpose

Same as Warsaw Convention.

3. Note should be taken of the following provisions:

Article 3

1. In respect of the carriage of passengers an individual or collective document of carriage shall be delivered containing:

a) an indication of the places of departure and destination;

b) if the places of departure and destination are within the territory of a single High Contracting Party, one or more agreed stopping places being within the territory of another State, an indication of at least one such stopping place.

2. Any other means which would preserve a record of the information indicated in a) and b) of the foregoing paragraph may be substituted for the delivery of the document referred to in that paragraph.

3. Non-compliance with the provisions of the foregoing paragraphs shall not affect the existence or the validity of the contract of carriage, which shall, nonetheless, be subject to the rules of this Convention including those relating to limitation of liability.

Article 4

1. In respect of the carriage of checked baggage, a baggage check shall be delivered, which, unless combined with or incorporated in a document of carriage which complies with the provision of Article 3, paragraph 1, shall contain:

a) an indication of the places of departure and destination;

b) if the places of departure and destination are within the territory of a single High Contracting Party, one or more agreed stopping places being within the territory of another State, an indication of at least one such stopping place.

2. Any other means which would preserve a record of the information indicated in a) and b) of the foregoing paragraph may be substituted for the delivery of the baggage check referred to in that paragraph.

3. Non-compliance with the provisions of the foregoing paragraphs shall not affect the existence or the validity of the contract of carriage, which shall, none the less, be subject to the rules of this Convention including those relating to limitation of liability.

VI. *MONTREAL PROTOCOL NO. 4 TO AMEND THE CONVENTION FOR THE UNIFICATION OF CERTAIN RULES RELATING TO INTERNATIONAL CARRIAGE BY AIR SIGNED AT WARSAW ON 12 OCTOBER 1929 AS AMENDED BY THE PROTOCOL DONE AT THE HAGUE ON 28 SEPTEMBER 1955 (PROTOCOL NO. 4)*

1. Status

Signed on 16 October 1975.

2. Purpose

Same as Warsaw Convention.

3. Note should be taken of the following provisions:

Article 5

1. In respect of the carriage of cargo an air waybill shall be delivered.

2. Any other means which would preserve a record of the carriage to be performed may, with the consent of the consignor, be substituted for the delivery of an air waybill. If such other means are used, the carrier shall, if so requested by the consignor, deliver to the consignor a receipt for the cargo permitting identifi-

cation of the consignment and access to the information contained in the record preserved by such other means.

3. The impossibility of using, at points of transit and destination, referred to in paragraph 2 of this Article does not entitle the carrier the other means which would preserve the record of the carriage to refuse to accept the cargo for carriage.

Article 6

1. The air waybill shall be made out by the consignor in three original parts.

2. The first part shall be marked "for the carrier"; it shall be signed by the consignor. The second part shall be marked "for the consignee"; it shall be signed by the consignor and by the carrier. The third part shall be signed by the carrier and handed by him to the consignor after the cargo has been accepted.

3. The signature of the carrier and that of the consignor may be printed or stamped.

4. If, at the request of the consignor, the carrier makes out the air waybill, he shall be deemed, subject to proof to the contrary, to have done so on behalf of the consignor.

VII. UNCTAD CONVENTION ON INTERNATIONAL MULTIMODAL TRANSPORT OF GOODS (MULTIMODAL TRANSPORT CONVENTION)

1. Status

Adopted 24 May 1980.

2. Purpose

To resolve legal uncertainties in the area of liability pertaining to international multimodal transportation.

3. Note should be taken of the following provisions:

Article 1

(4) "Multimodal transport document" means a document which evidences a multimodal transport contract, the taking in charge of the goods by the multimodal transport operator, and an undertaking by him to deliver the goods in accordance with the terms of the contract.

* * *

(10) "Writing" means, *inter alia*, telegram or telex.

Article 5

(2) The multimodal transport document shall be signed by the

multimodal transport operator or by a person having authority from him.

(3) The signature on the multimodal transport document may be in handwriting, printed on 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 multimodal transport document is issued.

(4) If the co-signor so agrees, a non-negotiable multimodal transport document may be issued by making use of any mechanical or other means preserving a record of the particulars stated in Article 8 to be contained in the multimodal transport document. In such a case the multimodal transport operator, after having taken the goods in charge, shall deliver to the co-signor a readable document containing all the particulars so recorded, and such document shall for the purposes of the provision of this Convention be deemed to be a multimodal transport document.

Article 8

1. The multimodal transport document shall contain the following particulars:

- (a) The general nature of the goods, the leadings marks necessary for identification of the goods, an express statement, if applicable, as to the dangerous character of the goods, the number of packages or pieces, and the gross weight of the goods or their quantity otherwise expressed, all such particulars as furnished by the consignor;
- (b) The apparent condition of the goods;
- (c) The name and principal place of business of the multimodal transport operators;
- (d) The name of the consignor;
- (e) The consignee, if named by the consignor;
- (f) The place and date of taking in charge of the goods by the multimodal transport operator;
- (g) The place of delivery of the goods;
- (h) The date or the period of delivery of the goods at the place of delivery, if expressly agreed upon between the parties;
- (i) A statement indicating whether the multimodal transport document is negotiable or non-negotiable;
- (j) The place and date of issue of the multimodal transport document;

(k) The signature of the multimodal transport operator or of a person having authority from him;

(l) The freight for each mode of transport, if expressly agreed between the parties, or the freight, including its currency, to the extent payable by the consignee or other indication that freight is payable by him.

(m) The intended journey route, modes of transport and places of transshipment, if known at the time of issuance of the multimodal transport document;

(n) The statement referred to in paragraph 3 of article 28;

(o) Any other particulars which the parties may agree to insert in the multimodal transport document, if not inconsistent with the law of the country where the multimodal transport document is issued.

2. The absence from the multimodal document of one or more of the particulars referred to in paragraph 1 of this article shall not affect the legal character of the document as a multimodal transport document provided that it nevertheless meets the requirements set out in paragraph 4 of article 1.

Article 24

1. Unless notice of loss or damage, specifying the general nature of such loss or damage, is given in writing by the consignee to the multimodal transport operator not later than the working day after the day when the goods were handed over to the consignee, such handing over is *prima facie* evidence of the delivery by the multimodal transport operator of the goods as described in the multimodal transport document.

* * *

5. No compensation shall be payable for loss resulting from delay in delivery unless notice has been given in writing to the multimodal transport operator within 60 consecutive days after the day when the goods were delivered by handing over to the consignee or when the consignee has been notified that the goods have been delivered in accordance with paragraph 2 (b) (ii) or (iii) of article 14.

VIII. *INTER-AMERICAN CONVENTION ON INTERNATIONAL CARRIAGE OF GOODS BY ROAD (INTER-AMERICAN CONVENTION)*

1. Status

Adopted 15 July 1989.

2. Purpose

To harmonize the laws with respect to negotiability of bills of lading for international road transportation.

3. Note should be taken of the following provisions:

Article 1

(d) **BILL OF LADING, TRANSPORT DOCUMENT OR CONSIGNMENT NOTE** means the document certifying that the carrier has taken the goods into his care and has undertaken a commitment to deliver these in accordance with the agreed upon term.

Article 4

(a) If the shipper so agrees, a non-negotiable bill of lading may be used using any mechanical or electronic means that recover the information stipulated in Article 5.

Article 5

The bill of lading shall contain the following particulars:

(1) The signature of the carrier or of the party issuing the bill of lading in the carrier's name and as his representative, and the signature of the shipper, his representative, agents or servants. These signatures may be handwritten or made by any mechanical or electronic means, if this is not inconsistent with the laws of the country where the bill of lading is issued.

IX. *CONVENTION ON THE LIABILITY OF OPERATORS OF TRANSPORT TERMINALS IN INTERNATIONAL TRADE TERMINAL OPERATORS CONVENTION)*

1. Status

Adopted April 19, 1991.

2. Purpose

To promulgate uniform rules governing the liabilities of persons who take charge of goods in international trade in order to perform transport-related services.

3. Note should be taken of the following provisions:

Article 4

(1) The operator may, and at the customer's request shall, within a reasonable period of time, at the option of the operator, either:

(a) Acknowledge his receipt of the goods by signing and dating a document presented by the customer that identifies the goods, or

(b) Issue a signed document identifying the goods, acknowledging his receipt of the goods and the date thereof, and stating their condition and quantity in so far as they can be ascertained by reasonable means of checking.

(2) If the operator does not act in accordance with either subparagraph (a) or (b) of paragraph (1), he is presumed to have received the goods in apparent good condition, unless he proves otherwise. No such presumption applies when the services performed by the operator are limited to the immediate transfer of the goods between means of transport.

(3) A document referred to in paragraph (1) may be issued in any form which preserves a record of the information contained therein. When the customer and the operator have agreed to communicate electronically, a document referred to in paragraph (1) may be replaced by an equivalent electronic data interchange message.

(4) The signature referred to in paragraph (1) means a hand-written signature, its facsimile or an equivalent authentication effected by any other means.

* * *

**X. *CONVENTION ON A COMMON TRANSIT PROCEDURE
BETWEEN THE EEC AND THE EFTA COUNTRIES
(EEC/EFTA TRANSIT CONVENTION)***

1. Status

Signed at Interlaken on 20 May 1987, and entered into force on 1 January 1988.

2. Purpose

To establish measures for the carriage of goods in transit between the Community and the EFTA countries as well as between the EFTA countries themselves.

3. Note should be taken of the following provisions:

Article 1

4. Transit declarations and transit documents for the pur-

poses of the common transit procedure shall conform to and be made out in accordance with Appendix III.

Appendix III To the Convention

Article 3

1. When formalities are completed using public or private computer systems, the competent authorities shall authorize persons who request it to replace the handwritten signature with a comparable technical device, which may, where applicable, be based on the use of codes and which has the same legal consequences as a handwritten signature. This facility shall be granted only if the technical and administrative conditions laid down by the competent authorities are met.

2. Where formalities are completed using public or private computers which also print out the declarations, the competent authorities may provide for direct authentication to the system of declarations produced in place of the manual or mechanical application of the customs office stamp and the signature of the competent official.

XI. *BASEL CONVENTION ON THE CONTROL OF TRANS-BOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL. (BASEL CONVENTION)*

1. Status

2. Purpose

To establish rules governing the movement of hazardous waste between nations.

3. Note should be taken of the following provisions:

Article 6

1. The State of export shall notify, or shall require the generator or exporter to notify, in writing, through the channel of the competent authority of the State of export, the competent authority of the States concerned of any proposed transboundary movement of hazardous wastes or other wastes. Such notification shall contain the declarations and information specified in Annex V A, written in a language acceptable to the State of import. Only one notification needs to be sent to each State concerned.

2. The State of import shall respond to the notifier in writing, consenting to the movement with or without conditions, denying permission for the movement, or requesting additional information. A copy of the final response of the State of import

shall be sent to the competent authorities of the States concerned which are Parties.

3. The State of export shall not allow the generator or exporter to commence the transboundary movement until it has received written confirmation that:

(a) The notifier has received the written consent of the State of import; and

(b) The notifier has received from the State of import confirmation of the existence of a contract between the exporter and the disposer specifying environmentally sound management of the wastes in question.

4. Each State of transit which is a Party shall promptly acknowledge to the notifier receipt of the notification. It may subsequently respond to the notifier, in writing, within 60 days, consenting to the movement with or without conditions, denying permission for the movement, or requesting additional information. The State of export shall not allow the transboundary movement to commence until it has received the written consent of the State of transit. However, if at any time a Party decides not to require prior written consent, either generally or under specific conditions, for transit transboundary movements of hazardous wastes or other wastes, or modified its requirements in this respect, it shall forthwith inform the other Parties of its decision pursuant to Article 13. In this latter case, if no response is received by the State of export within 60 days of the receipt of a given notification by the State of transit, the State of export may allow the export to proceed through the State of transit.

5. In the case of a transboundary movement of wastes where the wastes are legally defined as or considered to be hazardous wastes only:

(a) By the State of export, the requirements of paragraph 9 of this Article that apply to the importer or disposer and the State of import shall apply *mutatis mutandis* to the exporter and State of export, respectively;

(b) By the State of import, or by the States of import and transit which are Parties, the requirements of paragraph 1, 3, 4 and 6 of this Article that apply to the exporter and State of export shall apply *mutatis mutandis* to the importer or disposer and State of import, respectively; or

(c) By any State of transit which is a Party, the provisions of paragraph 4 shall apply to such State.

6. The State of export may, subject to the written consent of the States concerned, allow the generator or the exporter to use a general notification where hazardous wastes or other wastes having the same physical and chemical characteristics are shipped regularly to the same disposer via the same customs office of export of the State of export via the same customs office of entry of the State of import, and, in the case of transit, via the same customs office of entry and exit of the State or States of transit.

7. The States concerned may make their written consent to the use of the general notification referred to in paragraph 6 subject to the supply of certain information, such as the exact quantities or periodical lists of hazardous wastes or other wastes to be shipped.

8. The general notification and written consent referred to in paragraphs 6 and 7 may cover multiple shipments of hazardous wastes or other wastes during a maximum period of 12 months.

9. The Parties shall require that each person who takes charge of a transboundary movement of hazardous wastes or other wastes sign the movement document either upon delivery or receipt of the wastes in question. They shall also require that the disposer inform both the exporter and the competent authority of the State of export of receipt by the disposer of the wastes in question and, in due course, of the completion of disposal as specified in the notification. If no such information is received within the State of export, the competent authority of the State of export or the exporter shall so notify the State of import.

10. The notification and response required by this Article shall be transmitted to the competent authority of the Parties concerned or to such governmental authority as may be appropriate in the case of non-Parties.

11. Any transboundary movement of hazardous wastes or other wastes shall be covered by insurance, bond or other guarantee as may be required by the State of import or any State of transit which is a Party.