

ELECTRONIC BILL OF LADING IN THE JORDANIAN LEGISLATION: A COMPARATIVE STUDY WITH HAMBURG AND ROTTERDAM RULES

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ABSTRACT

The sea bill of lading is the most important maritime transport document. One day, the electronic bill of lading will become the only document used in maritime transport and its paper form will be merely part of history. Continuing to use the paper bill of lading negatively affects foreign trade and maritime transport in Jordan in light of the global trend towards the full use of electronic bills of lading. This study adopted the descriptive analytical approach by analyzing the legal provisions related to dealing with the electronic bills of lading in the Jordanian legislation and comparing them with the rules of Hamburg 1978 and Rotterdam 2008. The study is divided into two sections: the concept of the electronic bill of lading, and the stages of the electronic bill of lading in terms of its issuance, trading, and expiration. The results of the study revealed the possibility of dealing with the electronic bills of lading in Jordan in light of the provisions of Jordanian legislation and the rules of Hamburg 1978. The study recommends encouraging the Jordanian government to ratify the Rotterdam Rules 2008 as the legal structure for electronic bills of lading.

KEYWORDS: *Electronic bill of lading, Electronic transactions, Hamburg Rules, Rotterdam Rules.*

1. INTRODUCTION

The sea bill of lading is a document issued by the maritime carrier to the shipper upon shipping of the goods, in which the carrier agrees to deliver the items to the bearer of the bill under the conditions specified. It is a critical document

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for all parties involved in the product shipment process. For the shipper, the bill of lading is a way of verifying the delivery of the goods to the carrier as well as the terms of the transport contract. On the part of the carrier, it is a means to prove his obligations and the extent of his responsibility for the process of transporting the goods, and on the part of the consignee, it is a means to prove his rights to receive the goods and to claim compensation for the damage that may be caused to them.

As a result of technological progress, the idea of an electronic bill of lading has emerged in support of the idea of speed and ease in completing international trade operations. Among the first attempts to use the electronic bill of lading was that of “Chase Manhattan Bank”, which adopted the idea of the “Sea Docs project” in 1976, so that the mentioned bank would be a registry office with which paper bills of lading are deposited, and then the rest of the procedures are done electronically by telex. The experiment aimed to attain an electronic bill of lading in the petroleum sector. The experiment did not last more than a year due to the fear of competition, and lack of assurance of confidentiality of information¹.

Internationally, the Committee Maritime International (CMI) sought to issue special rules for the electronic bill of lading in 1990. Those rely on electronic means only, which is represented by the Electronic Data Interchange (EDI) system², but this system was criticized due to the difficulty of electronic trading on time and the insufficient security for its users³, however, these rules played an important role in the emergence of the BOLERO project, which is a successful experiment in dealing with electronic bills of lading⁴ because it provides a secure system for electronic commercial documents, and because it is based on the idea of replacing paper commercial documents, including the paper bill of lading, with the electronic message system⁵. The BOLERO project has

¹ Ali Eldin, R.: *The legal system of electronic bills of lading: A study in the light of conflict of laws rules*, Journal of Legal and Economic Research, 5 (2) 2015, p. 314.

² Mulligan, R.: *EDI in foreign trade: a perspective on change and international harmonization*, Logistics Information Management, 12(4) 1999, p.300.

³ Bury, D.: *Electronic bills of lading: a never-ending story*, Tul. Mar. LJ, (41) 2016, p.2016, p. 217; Zekos, G.: *EDI and the contractual role of computerized (electronic) bills of lading*, Managerial Law, 41(6) 1999, p.22.

⁴ Mahmoud, S.: *The technical, legal, and administrative readiness of the maritime transport agencies in the Kingdom of Saudi Arabia to use the electronic bill of lading*. Al-Huqooq Journal for Economic Legal Research, 21(1) 2009, p. 272.

⁵ Mahmoud, S.: *The technical, legal, and administrative readiness of the maritime transport agencies in the Kingdom of Saudi Arabia to use the electronic bill of lading*. Al-Huqooq Journal for Economic Legal Research, 21(1) 2009, p. 272.

established a central register in which the carrier deposits the electronic bill of lading, then, the holder whose name is recorded on it in the central register has the right to transfer it to a new holder so that he becomes the only person who exercises the rights conferred by the electronic bill of lading. These operations are carried out through electronic messages that have encryption techniques. These techniques are represented by providing two keys for each user: a public key available to all users to verify the validity of the information, and a secret private key for the user that enables only him to control the electronic bill of lading. Recently, Rotterdam Rules 2008 formulated a legislative framework that takes into consideration several technical and economic advancements in the sector of marine transportation, including the electronic bill of lading. The agreement established a legal regulation of the provisions of the electronic bill of lading as a legal basis to deal with at the international level.

The significance of this study is related to the importance of the bill of lading itself, which is the most important document of international shipping while the electronic form of the bill of lading is a qualitative shift in the field of maritime transport as a result of technological progress. This supports the idea of speed and ease in the completion of international trade operations. One day, the electronic bill of lading would become the only document used in maritime transport and the paper form would be merely part of the past.

This study adopted the descriptive analytical approach by analyzing the legal provisions related to dealing with the electronic bill of lading in Jordanian legislation and comparing them with the Hamburg Rules of 1978 and the Rotterdam Rules of 2008. Continuing to use the paper bill of lading, despite the tendency of states towards full use of the electronic form, will negatively affect foreign trade and maritime transport in Jordan. It is feared that Jordanian ports will face isolation in their dealings with international shipping and transport companies. Regarding the absence of Jordanian court rulings concerning electronic bills of lading, and in light of the emergence of the idea of electronic bills of lading in maritime transport, the study aims to answer the following question:

Does the legal reality in Jordan constitute a legal basis for dealing with the electronic bill of lading?

2. THE CONCEPT ELECTRONIC BILL OF LADING

This section discusses the definition of the electronic bill of lading, its functions and parties, and the advantages and disadvantages of its use.

2.1. DEFINING ELECTRONIC BILL OF LADING

The Jordanian Maritime Trade Law (JMTL) did not provide a definition of the electronic bill of lading, and the reason is that the aforementioned law was issued in 1972 which was influenced by the provisions of the 1924 Brussels Convention, and therefore it was issued before the technological development of means of communication. The idea of electronic bills of lading did not exist at that time. Recently, the Jordanian legislator moved toward keeping pace with technological developments and issued the Jordanian Electronic Transactions Law No. (15) of (2015), which did not provide a separate definition of an electronic bill of lading, but rather set a definition of an electronic document in general as “the document created, signed, and circulated electronically”.

Likewise, the Hamburg rules did not define the electronic bill of lading, but it was stated in Article (14/3) as “The signature on the bill of lading may be ... made by any other mechanical or electronic means”. This Article allows the bill of lading to be signed electronically, but it does not indicate that the entire bill can be issued in an electronic form. There is no doubt that as long as the signature is electronic, the entire bill of lading is presumed to be electronic since the connection of the electronic signature to a paper document is unreasonable.

Out of its interest in electronic shipping documents, the Rotterdam rules defined the “Electronic transport record” as the information in one or more messages delivered by electronic communication under a Contract of Carriage by a carrier, including information logically related to the electronic transport record, according to the Rotterdam Rules. This is accomplished by attaching or otherwise linking to the electronic transport record contemporaneously with or after its issue by the carrier so that it becomes part of the electronic transport record, that: (a) Evidences the carrier’s or a performing party’s receipt of goods under a Contract of Carriage; and (b) Evidence or contains a Contract of Carriage”. The above definition includes the following ideas: Rotterdam Rules used the term “electronic transport record” rather than “electronic bill of lading”. This study, in turn, will maintain the use of the term “Electronic Bill of Lading” even when talking about the provisions of the Rotterdam Rules as a way of unifying the terminology in this study.

It should be noted that the electronic bill of lading includes two types of data: “*basic data*” which is similar to the data of the traditional bill of lading, such as the name of the shipper, the consignee, the nature of the goods, and the terms of carriage and “*associated data*” in the form of annexes to the electronic record either at the time of its creation or later, such as the shipping order,

packing list, etc. Finally, an electronic bill of lading may be divided into more than one electronic message, i.e. the bill of lading is not required to be in a single electronic message.

The current study, in turn, defines an electronic bill of lading as “an electronic document and its annexes containing the Contract of Carriage data issued electronically by the carrier to the shipper upon receipt of the goods. It may be transferred to another holder who is entitled to receive the goods upon arrival”.

2.2. FUNCTIONS OF ELECTRONIC BILL OF LADING

An electronic bill of lading performs the same tasks as a traditional bill of lading. Among the most notable are:

Proof of a Contract of Carriage

An electronic bill of lading is evidence of a Contract of Carriage⁶. Article 1/18/b of the Rotterdam Rules provides for this function. Since the electronic bill of lading is a type of electronic record that replaces written documents in support of Article (6) of the Jordanian Electronic Transactions Law, the electronic bill of lading is evidence of the existence of a Contract of Carriage⁷. At the same time, the bill of lading, whether traditional or electronic, is not the same as the Contract of Carriage, even if it includes the terms of the contract of carriage⁸.

Document of Title

The electronic bill of lading is evidence of the ownership of the goods⁹. The identification of the owner of the goods depends on the form in which the bill is issued, which comes in two forms:

⁶ Zekos, G., op. cit. in ref 3, p. 21.

⁷ Al-Esawy, M.: *Legal regulation of electronic bill of lading in light of the 2008 Rotterdam Convention for the International Carriage of Goods by Sea*, Yearbook of the Faculty of Islamic and Arabic Studies for Girls in Alexandria, 2(2) 2018, p. 775.

⁸ Al-Jzae'ry, H.: *The effect of the container function on the function of the bill of lading as a tool for proving the contract of carriage*, Journal of Law, 13(3) 1989, p. 150; Al-Otair, A.: *The mediator in explaining the law of maritime trade*, Amman, 2014, p. 233.

⁹ Al-Dabbagh, A.: *The legal provisions of the electronic bill of lading: A comparative study*. Al-Rafidain Journal of Law, 17(55) 2012, p. 120; Zekos, G., op. cit. in ref 3, p. 21.

Non-negotiable electronic bill of lading: A bill issued in the name of a specified individual who is only authorized to receive the carried goods upon arrival at the designated location. The carrier will only deliver the goods to the person whose name appears on the electronic bill of lading, as required in Article 1/20 of the Rotterdam Rules.

Negotiable electronic bill of lading: This is issued in the name of a particular person with the power to transfer the right of receipt of the goods to someone else so that the carrier will deliver the goods to the holder of the electronic bill of lading, whether the consignee or any recipient of it. This is provided for in Article 47/1 of the Rotterdam Rules.

Evidence of the Carrier's Receipt of the Goods

The electronic bill of lading is evidence that the carrier has received the goods to be shipped in the condition and manner described therein¹⁰. This function is provided for by Article 16 of the Hamburg Rules and Article 41 of the Rotterdam Rules.

2.3. PARTIES DEALING WITH THE ELECTRONIC BILL OF LADING

The parties to the contract of carriage are the shipper and the carrier. As for the parties dealing with the electronic bill of lading, they are the issuer of the electronic bill of lading, the controller, and the holder.

The issuer of the Electronic Bill of Lading

The issuer of the electronic bill of lading is the carrier or his representative. The Jordanian Maritime Trade Law did not define the carrier, while the Hamburg Rules defined it as “any person by whom or in whose name a Contract of Carriage of goods by sea has been concluded with a shipper”¹¹. Whereas Rotterdam Rules defined it as “a person that enters into a Contract of Carriage with a shipper”¹².

According to Jordanian legislation, a carrier is required to be registered in the Kingdom as a company or enterprise with the Directorate of Corporate Control of the Ministry of Industry and Trade. It is, also, required to obtain

¹⁰ Halima, H.: *Electronic bill of lading*, Algerian Journal of Maritime and Transport Law, 4(1) 2014, p. 56; Zekos, , op. cit. in ref 3, p. 21

¹¹ Hamburg rules, (1978), Art. 1(1).

¹² Rotterdam Rules,(2008),Art.1 (5).

a license to engage in maritime activity from the Aqaba Special Economic Zone Authority (ASEZA) in coordination with the Maritime Authority if it is located within the limits of the Aqaba Special Economic Zone, and from the Maritime Authority alone if it is located outside its limits¹³. (S 3 Jo. Shipping Instruction)

The Controller of the Electronic Bill of Lading

The concept of a controller according to Article 1/13 of Rotterdam Rules is “the person that is entitled to exercise the right of control”. Article 51/1/a of the Rotterdam Rules states that “The shipper is the controlling party unless the shipper, when the Contract of Carriage is concluded, designates the consignee, the documentary shipper or another person as the controlling party”. Article 51/4 /a of the Rotterdam Rules also states that “When a negotiable electronic transport record is issued a) the holder is the controlling party”.

By defining the holder as the person to whom a negotiable electronic transport record was issued or transferred¹⁴, it also applies to the shipper, who is the person to whom the bill is issued, based on the same rules that defined the holder as the person to whom a negotiable electronic transport record was issued or transferred. The controller has the following rights, according to Articles 13, 50, and 51 of the Rotterdam Rules:

1. The right to give instructions to the carrier regarding the goods, to the extent that it is not considered an amendment to the Contract of Carriage, since such amendments require the consent of the parties, who are only the carrier and the shipper.
2. The right to receive the goods at the agreed port of stop and it would have been preferable for the Rotterdam Rules to stipulate “the agreed-upon place” and not to limit the right of delivery at the port to suit the Door-to-door Sales Contract.
3. The right to replace the consignee with any other person.
4. The right to transfer the control to another person.

Holder of the Electronic Bill of Lading

Article 1/10 of the Rotterdam Rules defined the holder as “a person that is in possession of a negotiable transport document”. The holder is the person to whom the electronic bill of lading is issued or transferred too. The “issued to

¹³ [<https://jma.gov.jo/wp-content/uploads/2021/03/E5ED1.pdf>], accessed on 2/9/2021.

¹⁴ Rotterdam Rules, (2008) ,Art. 1 (10/b).

whom” is the first person to whom the electronic bill of lading is issued directly by the carrier, which is the shipper or his representative as a freight broker, while the assignee is the person who receives the bill of lading by trading as the consignee and their subsequent assignees. The consignee receives the electronic bill of lading through the shipper, and the consignee can refer the electronic bill of lading to a new holder and so on until the goods are received by the last holder.

The status of the holder of the electronic bill of lading is inferred from the paragraph of Article 19 of the Jordanian Electronic Transactions Law which states “The holder of the electronic bill shall be deemed to be the holder of the right to a transferable bill and is entitled to the rights and defenses enjoyed by the holder of the ordinary bill”. By applying the aforementioned Article to the electronic bill of lading it is evident that the status of the holder of the electronic bill of lading is equal to that of the holder of the paper bill of lading in terms of rights and defenses. Furthermore, the holder of the electronic bill of lading has rights, the most important of which are claiming delivery of the goods, the right to dispose of them, demanding compensation from the carrier for any damage related to the goods, and transferring the electronic bill of lading to a new holder¹⁵.

2.4. PROS AND CONS OF USING THE ELECTRONIC BILL OF LADING

The use of the electronic bill of lading is a remedy for the classic problem of the arrival of the goods at the port of arrival before the arrival of bills sent by mail or by manual methods which exposes the goods to damage and exposes the owner to bear excessive expenses such as storage expenses¹⁶. The electronic bill of lading also provides for the rapid arrival of electronic bill of lading statements leading to the rapid issuance of documents associated with the Trade transaction, such as invoices, and the rapid trading, resale and acceleration of payment, and contribution to the cash abundance of businesses¹⁷, in addition to the ease of storing data and the ease and speed of reference in time of need¹⁸, and saving the expenses required by paper documents¹⁹.

¹⁵ Mahmoud, S., op. cit. in ref 4, p. 227.

¹⁶ Bury, D., op. cit. in ref 3, p. 224; Ziakas, V.: *Challenges regarding the electronic bill of lading (Ebol)*, International Journal of Commerce and Finance, 4(2) 2018, p. 40.

¹⁷ Schmitz, T. *The bill of lading as a document of title*. Journal of international Trade law and policy, 10 (3) 2011, p.273.

¹⁸ Malash, F.: *Multimodal transport, commercial and legal aspects*, Alexandria, 1996, p. 444.

¹⁹ [<https://www.bolero.net/digitisation/4-benefits-of-electronic-bills-of-lading-that-will-increase-ebul-utilisation/>], accessed on 9/9/2021.; Mahmoud, S., op. cit. in ref 4, p.236.

The electronic bill of lading contributes to the avoidance of problems arising from the use of paper-based models, resulting in increased efficiency of international transportation and the prosperity of international trade in general. Among these problems is the possibility of losing copies of the bill of lading, which will cause problems with reissuing Documents instead of lost²⁰. Furthermore, the electronic bill of lading is less prone to fraud and forgery compared to the paper bill of lading which can be forged and its data manipulated²¹. The electronic bill of lading is protected by electronic protection systems that do not allow the modification of its data except within protocols that are only practiced by those with legal and technical authority to amend²². Finally, the meeting of the transacting parties is not required in the electronic bill of lading. All operations relating to the issuance and transfer of the electronic bill of lading are conducted by electronic means of communication²³.

One of the disadvantages concerning the use of an electronic bill of lading is the inability to trade the bill or transfer it to others unless they are members of the program for the creation and trading of the electronic bill of lading²⁴. While the paper bill of lading does not require such an associating, the negotiable bill can be endorsed to any person as soon as it is endorsed or as soon as it is delivered if the paper bill is for the holder. In addition, the electronic bill of lading can only be traded by a procedure issued by the carrier; that is the creation of a Special key (Secret Number) to the new holder after the old holder's key has been canceled. While the traditional bill of lading does not require any procedure by the carrier but is traded once it is signed if it is ordered for someone, and once it is handled if it is for its holder²⁵. To use the electronic bill of lading, some conditions are required, namely, the availability of special equipment such as means of communication, effective internet, international infrastructure, and others at the level of government agencies within countries²⁶.

²⁰ Al-Esawy, M., op. cit. in ref 11, p. 770.

²¹ Abdou, M.: *Coping with fraud related to maritime documents in accordance with Qatari maritime law and international agreements*, Legal and Judicial Journal, 5(2) 2011, p.159.

²² Ziakas, V., op. cit. in ref 20, p. 41.

²³ Mulligan, R., op. cit. in ref 2, p. 304.

²⁴ Hong, G.: *Electronic Bill of Lading's Title Transfer in International E-commerce*, Second International Conference on Business Computing and Global Informatization, Shanghai, 2012, p. 356.

²⁵ Hong, G., op. cit. in ref 28, p. 354)

²⁶ Goldby, M.: *Electronic bills of lading and central registries: what is holding back progress?*, Information & Communications Technology Law, 17(2) 2008, p. 133.

Among the disadvantages of the electronic bill of lading is its vulnerability to error. Errors have several sources, the most important of which are human errors related to a person's errors in entering data in the creation of an electronic bill of lading²⁷, technical errors arising from computer or software defects²⁸, external errors due to external factors such as weather conditions affecting disruption of electrical currents and disruption of communication networks²⁹. Finally, the electronic bill of lading may be exposed to the risks of piracy³⁰. This negativity is related to information security and protection guarantees, the penetration of which may cause distrust and insecurity of dealers with the electronic bill of lading.

3. THE STAGES OF AN ELECTRONIC BILL OF LADING

The electronic bill of lading goes through three stages: the issuance, the trading, and the expiration stage.

3.1. THE ISSUANCE STAGE OF THE ELECTRONIC BILL OF LADING

The first stage in the life of an electronic bill of lading is the process of its issuance, which is its creation and its transmission to the shipper. It is the most important stage in the life of the electronic bill of lading, as it is the stage of its creation and emergence. To produce an electronic bill of lading with legal effects, four types of requirements must be met: substantive, formal, programmatic, and legal.

3.1.1. SUBSTANTIVE REQUIREMENTS

They are requirements related to the will of the parties to the Contract in terms of the existence of an agreement on the contract of carriage and an agreement to use the electronic form of the bill of lading:

Existence of a Contract of Carriage

A contract of carriage is required before the issuance of the electronic bill of lading. Such a contract must have the legal conditions for its validity, such as

²⁷ Goldby, M., op. cit. in ref 30, p. 137.

²⁸ Ziakas, V., op. cit. in ref 20, p. 42.

²⁹ Al-Esawy, M., op. cit. in ref 11, p. 780.

³⁰ Al-Esawy, M., op. cit. in ref 11, p. 782.

the integrity of consent, the eligibility of the parties to the Contract, and the legality of its object and cause. The Jordanian Maritime Trade Law defines the contract of carriage in Article (177) as “a contract in which the carrier undertakes, in return for a fee, to deliver to a specific place baggage or goods provided that he transports them by sea during the entire or some period of travel”. While Article 1/6 of the Hamburg Rules defines it as “any Contract whereby the carrier undertakes against payment of freight to carry goods by sea from one port to another...”. Article 1/1 of the Rotterdam Rules defines it as “a contract in which a carrier, against the payment of freight, undertakes to carry goods from one place to another. The Contract shall provide for carriage by sea and may provide for carriage by other modes of transport in addition to the sea carriage”.

According to the definition of the contract of carriage in the Rotterdam Rules, it is limited to the means of maritime transport, since the transport in the concept of the Rotterdam Rules is from one seaport to another. As for the definition of the Jordanian Maritime Trade Law and the Rotterdam Rules, it is not required that the contract of carriage be limited to maritime transport only, as the contract of carriage may be done by sea wholly or partially. In light of the development of goods transport operations, it has become unacceptable to say that the contract of carriage is limited to the stage of transport by sea, at a time when the carrier undertakes to receive the goods or deliver them at land delivery points far from the port of loading or the port of unloading. Maritime transport has developed to the extent that the carrier takes the responsibility to transport goods from the shipper’s warehouse to the consignee’s warehouse. This is known as the “door to door” principle.

The Approval of the Shipper and Carrier of the Electronic Bill of Lading Form

The shipper and the carriers dealing with the electronic bill of lading require their prior consent to using electronic means to create the bill of lading³¹. The Rotterdam Rules require the consent of the parties to the contract of carriage to use the electronic bill of lading form³². This consent differs from the consent of the parties, which is a condition to conclude the contract of carriage. It is a special consent to use the electronic bill of lading form.

³¹ Al-Esawy, M., op. cit. in ref 11, p. 770.

³² Rotterdam Rules, (2008), Art. 8(a).

3.1.2. FORMAL REQUIREMENTS

The formal requirements of the electronic bill of lading are the data that it must include. The electronic bill of lading consists of two facts, the first is that it is a bill of lading and the second is that it is electronic, and accordingly it includes two types of data: the traditional data of the bill of lading, and data required by its electronic nature³³.

Traditional Data

Since the Jordanian Maritime Trade Law does not provide for the provisions of the electronic bill of lading, the carrier when issuing the electronic bill of lading in the Kingdom of Jordan, must take into account the data of the traditional bill of lading stipulated in Article 200 of the Jordanian Maritime Trade Law and Article 15 of the Hamburg Rules, which are consistent with the data stipulated in the Rotterdam Rules. The data of the traditional bill of lading stipulated in Article 200 of the Jordanian Maritime Trade Law are:

1. Contractors' names: who are the shipper and the carrier.
2. Determining the type of shipped goods, their weight, size, their marks (brands), and the number of their parcels.
3. Ship's name, nationality, and cargo.
4. Conditions of transport: the freight, the place of travel, and the destination.
5. The date of delivering the document.
6. Signature of the shipmaster, ship-owner or his agent, and the shipper. This traditional statement will be replaced by an electronic signature.
7. The multiplicity of the number of copies of the bill of lading. Article 200 of the Jordanian Maritime Trade Law stated that "the shipping document is issued in three copies: a copy for the shipper, a second for the consignee, and a third for the master. The requirement of multiple copies is not consistent with the electronic nature of the electronic bill of lading, which consists of one copy that is circulated electronically"³⁴. Thus, the electronic system will lead to the sufficiency of an electronic copy that will be circulated among all parties.

³³ Šafranko, Z.: The notion of electronic transferable records, *InterEULawEast : journal for the international and european law, economics and market integrations*, 3 (2) 2016, P. 7.

³⁴ Ali Eldin, R., op. cit. in ref 1, p. 308.

The data of the bill of lading stipulated in Article 15 of the Hamburg Rules is similar to the data stipulated in Article 200 of the Jordanian Maritime Trade Law, noting that Article 15 of the Hamburg Rules added the following data:

1. An explicit statement of the dangerous character of the goods.
2. The perceived state of the products.
3. The carrier's primary location of business.
4. The consignee, if one is specified by the shipper.
5. The location of the bill of lading's issuance.
6. The date or term of delivery of the goods to the port of discharge, if specifically agreed upon by the two parties.
7. The declaration that the products will or may be brought on deck.
8. any agreed-upon enhanced limit or limitations of responsibility.

Finally, Article 36 of the Rotterdam Rules, which is concerned with data of both traditional and electronic bills of lading, has stipulated data similar to the bill of lading data contained in Article 15 of the Hamburg Rules, and Article 200 of the Jordanian Maritime Trade Law.

Electronic Data

The electronic signature is one of the most important electronic data for the electronic bill of lading. It was previously revealed that the Jordanian Maritime Trade Law stipulates that the master, ship owner, or his agent must sign the traditional bill of lading in Article 200, and there is no reference to electronic signature in this Article. This is not surprising as long as the Maritime Trade Law did not originally provide for the electronic bill of lading. The Hamburg Rules and the Rotterdam Rules explicitly stipulated the electronic form of signing the bill of lading³⁵. Article 14 of the Hamburg Rules stated, "the signature on the bill of lading may be ... made by any other mechanical or electronic means". Article 38/2 of the Rotterdam Rules stated that "an electronic transport record shall include the electronic signature of the carrier or a person acting on its behalf".

Since the electronic bill of lading falls within the concept of "Electronic Document" according to the Jordanian Electronic Transactions Law, its creation requires its association with an electronic signature by the issuer in order to

³⁵ Hamdy, K.: *The United Nations Convention on the Carriage of Goods by Sea: 1978 (Hamburg Rules)*, Alexandria, 1997, p. 33; Ziakas, V., op. cit. in ref 20, p. 41.

arrange its legal effects. Article (2) of the Jordanian Electronic Transactions Law defines an electronic signature as “data that take the form of letters, numbers, symbols, signs, or others and are included in electronic form or any other similar means in the electronic record, added to it or linked to it. The aim is to identify the owner of the signature as its unique user to distinguish him from others”. This definition is consistent with paragraph (a) of Article (2) of the UNCITRAL Model Law on Electronic Signatures (2001). The previous definition shows that the Jordanian legislator has relied on the principle of technical neutrality, that is to say, “not being limited to a specific method of electronic signature”³⁶. The electronic signature includes several forms while allowing the acceptance of any new form of the electronic signature that may appear in the future.

The electronic signature must include the private key and the public key. The private key is a means of creating the electronic signature and it involves confidentiality that no one other than the parties to the private key may know about it³⁷. The public key, on the other hand, is a means to verify the authenticity of the electronic signature. It may be directed to a specific person or more, in case a large number of people need to verify the authenticity of the electronic signature of the owner of the signature. As a result, and in light of Article (3) of the Jordanian Electronic Transactions Law, which did not mention the status of sea bills of lading from the activities in which the use of electronic signature is prohibited, and in light of Article (14) of the Hamburg Rules, which stipulates the possibility of electronically confirming the signature on the bill of lading, the legal possibility to use the electronic signature is available to the carrier in the Kingdom of Jordan to create the electronic bill of lading.

In addition to the electronic signature, it is necessary for the electronic bill of lading to include fields that enable its user to have the following features:

1. *Sending field*: The issuer of the bill of lading has the ability to send it to the concerned person after filling in the fields of his data.
2. *Transfer field*: It enables the holder to transfer it to another holder for the purposes of trading the electronic bill of lading; thus, the person who made the transfer loses control of the bill of lading, and the assignee becomes the new controller of the electronic bill of lading. This is done by changing the code or password of the carrier in favor of the transferee.
3. *Date and time fields*: They allow knowing the time and date of sending the electronic bill of lading form by the issuer.

³⁶ Al-Hasan, H. et al.: *Electronic Signature Authentication*, Damascus University, Journal of Economic and Legal Sciences, 26(1) 2010, p. 528.

³⁷ Zekos, G., op. cit. in ref 3, p. 6.

4. *Acceptance and rejection fields*: They allow the transferee to accept or reject the electronic bill of lading.
5. *Attachments upload feature*: This feature is important to show the documents attached to the electronic bill of lading.
6. *The feature of terminating the effectiveness of the electronic bill of lading*: This feature must be part of the right of the carrier if the purpose of the electronic bill of lading is done by delivering the transported goods to the owner of the right to receive them or using this feature in one of the cases of expiry of the bill of lading before the delivery of the goods which will be mentioned later in cases of expiry of the bill of lading electronic shipping.

3.1.3. TECHNICAL REQUIREMENTS

Both Article 21/1 and Article 9 of the Rotterdam Rules stipulate the following technical requirements for the use of an electronic bill of lading ³⁸:

1. Issuing it according to procedures that ensure that the record is subject to exclusive control, starting from its inception until it loses any effect or validity.
2. Issuing and transmitting it to an intended holder.
3. Making sure not to affect its integrity.
4. Defining how the holder can prove that he is the legitimate holder of the electronic bill of lading.
5. Determining the method by which to confirm the completion of the electronic bill of lading delivery to the holder.
6. Verifying that those previous procedures have been followed should be easy.

The conditions of the Rotterdam Rules were, apparently, concerned with the element of information security so that the exclusive control of the electronic bill of lading at any time is only for one person. Only one person is allowed the right of control at one time, and this is why the electronic bill of lading replaces the traditional bill of lading in business dealings.

Having studied the electronic bill of lading, it is necessary to have electronic software that has the following characteristics:

³⁸ Šafranko, Z., op. cit. in ref 37, p 10.

1. The software should be specialized in creating an electronic bill of lading. It should contain the fields that represent the legally required data, whether traditional or technical.
2. The possibility to download this software to the devices of parties to the electronic bill of lading and those dealing with it: shippers, carriers, and assignees.
3. The possibility to link this software with the official and private agencies related to the shipping process, such as the departments of ports, customs, and clearance offices³⁹.
4. This software must include an element of cyber security for fear of hacking it for fraudulent purposes⁴⁰.
5. The possibility to store and retrieve information⁴¹.
6. The existence of a third party ensures the validity of the signatures and identity of the parties dealing with the electronic bill of lading through this software⁴².
7. The study adds the requirements that no data can be modified after the electronic bill of lading is issued except within a protocol that includes the consent of the carrier and the holder. Moreover, ensuring the integrity of the modification procedures due to the seriousness of the modification is needed, as it is one of the methods of fraudsters and software hackers.

3.1.4. LEGAL PERMISSIBILITY FOR HANDLING THE ELECTRONIC BILL OF LADING

Although the Jordanian Maritime Trade Law did not regulate the provisions of the electronic bill of lading because it was issued in 1972 and was affected by the provisions of the 1924 Brussels Convention, a period when the electronic bill of lading had not existed, there is Jordanian legislation that is an acceptable Document to deal with the electronic bill of lading. These are:

1. Article (3) of the Jordanian Electronic Transactions Law: This Article has clarified the documents and transactions to which the provisions of the Electronic Transactions Law do not apply, and since the maritime bill of

³⁹ Schmitz, T., op. cit. in ref 21, p. 274.

⁴⁰ Schmitz, T., op. cit. in ref 21, p. 27.)

⁴¹ Ziakas, V., op. cit. in ref 20, p. 44.

⁴² Zekos, G., op. cit. in ref 3, p10.

lading was not included among these documents and transactions, it is legally permissible, according to the indication of this Article, to deal with the electronic bill of lading in the Kingdom of Jordan.

2. Article (4) of the Jordanian Electronic Transactions Law which stipulates that: “a. any ministry, public official institution, public institution, or municipality may conduct their transactions using electronic means”. Accordingly, the Jordanian government or public authorities related to the process of shipping goods by sea are allowed to accept the electronic sea bill of lading. Examples of these authorities are the Customs Department, the Income Tax Department, Sales Tax Department, Goods Storage Departments, and others.
3. Article (6) of the Jordanian Electronic Transactions Law which stipulates that “If any legislation requires the submission of any entry, Contract, or document in writing, the submission of the electronic record of any of them shall be deemed to produce the same legal effects, provided that a. The ability to view the electronic record information; b. The ability to store the electronic record and refer to it at any time. This article provides for a general provision that an electronic record acts as the written document required under any legislation in the Kingdom of Jordan. Therefore, if any legislation requires the submission of a paper sea bill of lading, the electronic bill of lading acts as such.
4. Article (61/c) of the Customs Law states that “The Department may accept the documents that must be attached to the customs declarations submitted by electronic means”. This Article is the legal basis for dealing with the electronic bill of lading by the Jordanian Customs Authorities, especially in the customs data for export, where the owner of the exported goods or the customs broker is supposed to attach a copy of the (traditional) bill of lading with the export statement. This copy should be stamped by the master of the ship stating that the goods were loaded on board the ship. A copy of the bill of lading is submitted to the release department of the customs authorities to seal this statement. Accordingly, the owner of the exported goods or the customs broker can submit the electronic bill of lading to the customs authority instead of submitting the traditional bill of lading.
5. Article (7) of the instructions to perform the work of maritime agencies and shipping brokers for the year 2003 issued by the Jordan Maritime Authority states “The shipping agent and shipping broker shall ... and facilitating the electronic exchange of information and data on ships and goods”⁴³. This stipulation places an obligation on the carriers and their agents to create

⁴³ [<https://jma.gov.jo/wp-content/uploads/2021/03/E5ED1.pdf>], Accessed on 2/9/2021.

electronic data about the goods and the ship initially, and then facilitate the exchange of this information. This is a legal basis for dealing with the electronic bill of lading in the maritime transport sector.

As such, the stipulations of the previous Articles are a legal basis for dealing with the electronic bill of lading in Jordan whether issued in the Kingdom in case of exporting or importing goods.

3.2. THE TRADING STAGE OF THE ELECTRONIC BILL OF LADING

The second stage of the electronic bill of lading life is trading, and this process begins with transferring the bill of lading from the consignee to another holder, and the latter can transfer it by re-sending it to a new holder and so on until its validity is expired by receiving the goods by the last holder. This is confirmed by Article 47 of the Rotterdam Rules. The possibility of trading the electronic bill of lading depends on the form in which it is issued as electronic bills are divided into negotiable and non-negotiable bills⁴⁴.

3.2.1. NON-NEGOTIABLE ELECTRONIC BILL OF LADING

It is the one issued in the name of a specific person, who is the only holder of the right to receive the goods⁴⁵, neither the shipper nor the consignee. It is not transferable to any other holder, and according to Rotterdam Rules, it is the document in which the phrase “Non-negotiable”⁴⁶. On the technical level, it is not assumed that the holder has the authority to transfer it electronically to another holder so the transfer order is disabled since the creation of the electronic bill of lading. This is called the nominative bill in the traditional bill of lading⁴⁷. If the parties to the contract of carriage wish to transfer the non-negotiable electronic bill of lading to another person, a special protocol must be followed that requires, at first, the approval of all parties, including the carrier, the old holder, and the new holder. This protocol entails the need to take technical measures to convert the bill of lading from a non-negotiable bill into a negotiable one.

⁴⁴ Al-Esawy, M., op. cit. in ref 11, p. 769.

⁴⁵ Schmitz, T., op. cit. in ref 21, p. 264.

⁴⁶ Rotterdam Rules, (2008), Art. 1(20).

⁴⁷ Al-Rubaie, F.: *Straight bill of lading and its effect on multimodal transportation of goods: A comparative study*, Beirut, 2018, p. 42; Al-Shawarbi, A.: *Maritime trade law.no. 8 of 1990 in the light of jurisprudence, judiciary and legislation*, Alexandria, 2018, p. 178)

3.2.2. NEGOTIABLE ELECTRONIC BILL OF LADING

According to Article 1/19 of Rotterdam rules, it is the electronic bill of lading denoting “to order” or “negotiable”. In the traditional bill of lading, this is called “to order bill of lading”. The legal basis for transferring the electronic bill of lading in Jordan is Article 18 of the Jordanian Electronic Transaction Law, which states: “a.” The electronic bill is transferable if the requirements of the negotiable bill specified in the commercial law are met except for the writing requirement”.

It seems that the previous Article referred to the conditions for transferring the electronic bill to the conditions for trading the commercial bills specified in the Jordanian commercial law; except for the writing requirement. Referring to the conditions for trading commercial Documents in the commercial law we find that Article 282 of it stipulates “(1) Every Document by which its signer commits to deliver a sum of money or a quantity of goods in a specific place and time, may be transferred by endorsement if it is expressly established in the words of the order”. Paragraph (2) of the same Article 282 also referred to the provisions of endorsement to the Articles (141-151) of the commercial law that regulate the provisions of endorsement of the bill of exchange. Thus, the terms of the electronic bill of lading in Jordan are governed by Article 18 of the Electronic Transactions Law and Articles 141-151 and 282 of the Jordanian commercial law, from which two types of requirements are derived:

Substantive Requirements

1. The carrier’s initial and express consent to issue a negotiable electronic bill of lading⁴⁸, as Article 18 of the Jordanian Electronic Transactions Law required the approval of the drawer, which is the carrier here, on the negotiability of the electronic bill of lading.
2. The electronic bill of lading transfer must be free of any condition. If a condition is commented on, it is considered canceled and the transfer remains valid⁴⁹.
3. The transfer must include the entire value of the electronic bill of lading, that is, all the goods mentioned therein, otherwise the partial transfer is invalid⁵⁰.

⁴⁸ Schmitz, T., op. cit. in ref 21, p. 265.

⁴⁹ Mahmoud S., op. cit. in ref 4, p. 263.

⁵⁰ Mahmoud, S., op. cit. in ref 4, p. 263.

Formal Requirements

1. The term “to order”: is the term that gives the electronic bill of lading the validity of the transfer.
2. The formula of negotiability: The negotiability formula should be written on the document, so that its validity is part of the fields of the electronic bill of lading, or transferred by an electronic bill, or an electronic message connected to it inseparably.
3. Naming the assignee of the electronic bill of lading.
4. Signature of the assignor: It should be an authenticated electronic signature in the manner explained previously in authenticating the electronic signature.
5. Date of transfer.

The concept of transferring an electronic bill of lading under the Rotterdam Rules means transferring exclusive control from person to person⁵¹. The idea of being a holder also applies to the person to whom exclusive control over the negotiable electronic bill of lading has been transferred according to Article 1/10/b of the Rotterdam Rules. This meaning was also confirmed by Article (51/4) of the Rotterdam Rules which states, “When a negotiable electronic transport record is issued: a) The holder is the controlling party”.

Mention should be made of the mechanism for trading the bill of lading according to (CMI) rules, which is done through the existing holder’s notification of the carrier’s intention to transfer the right of control to a new holder. The carrier confirms this notification and the electronic bill of lading data is sent to the new holder. After the new holder’s acceptance, he, in turn, informs the carrier of such acceptance. The carrier cancels the private key (the old secret number) and issues a new special key to the new holder under which he has all the rights of the old holder, including the right to claim receipt or transfer of the goods to another holder⁵². When the electronic bill of lading is traded according to (CMI) rules, the carrier should cancel the private key sent to the old holder and issue a private key to be sent to the new holder⁵³. This means that the electronic bill of lading is only traded with the consent of the carrier (issuer). This is part of the assignment of right established in the civil law and not of commercial endorsement which is established in the commercial law since it is the assignment that requires the approval of its issuer (the drawer), but in endorsement, the consent of the drawer is never required. Moreover,

⁵¹ Rotterdam Rules, (2008), Art. 22(1).

⁵² Hong, G., *op. cit.* in ref 28, p. 355.

⁵³ Schmitz, T., *op. cit.* in ref 21, p. 273.

the transmission of the electronic bill of lading to the shipper by the carrier is within the concept of issuance, not trading, since the stage of issuance is limited between the parties to the contract of carriage by sea, namely the carrier and the shipper. But if the shipper transfers control and possession to the consignee, this is considered trading, and the consignee also has the right to transfer control and possession to a new holder, and thus the electronic bill of lading is traded until it loses its validity.

Therefore, the following question is raised: Is a negotiable electronic bill of lading issued in “to bearer” form? First of all, the traditional bill of lading issued to its holder does not specify the name of the owner of the right to receive the goods, and therefore the owner of the right to receive the goods is any person who holds the bill of lading⁵⁴, where Article 204 of the Jordanian Maritime Law states, “The bill of lading shall be for either: a particular person or to order or to the bearer...”. The document of the holder shall be negotiable upon delivery. The master shall deliver the goods to any person with whom the bill of lading is presented. The possession of the bill of lading shall be evidence of the right to receive the goods. Hence, the traditional bills of lading issued to the holder are more vulnerable to fraud in receiving the goods due to the possibility of theft and loss.

As for an electronic bill of lading, according to Article 9/1/a of the Rotterdam Rules, when issuing or transferring an electronic bill of lading, this Article demand it to be to an intentional holder and did not envisage issuing it to the bearer, but Article (57/2) of the Rotterdam Rules reverted and provided that “When a negotiable electronic transport record is issued, its holder may transfer the rights incorporated in it, whether it be made out to the order or the order of a named person”. So, according to this article, an electronic bill of lading can be issued to the bearer, and therefore there appears to be a conflict between the two previous provisions, and it would have been better not to mention the first phrase “to the order” contained in Article 57/2 so that it remains consistent with the text of Article 1/9/a.

This study tends not to issue the electronic bill of lading to the holder, for the following reasons: An electronic bill of lading is different by nature from a paper bill of lading. It is software (like an electronic message) that is directed to a recipient, and the recipient must be a named person. Furthermore, the issuance and transmission of the electronic bill of lading require the carrier to issue a private key (a secret number) to be sent to the holder to give him the right to control the electronic bill of lading. Accordingly, the issuance of the private key (the secret number) is supposed to be sent to a specific person who remains

⁵⁴ Taha, M.: *Maritime law*. Cairo, 2018, p. 300; Schmitz, T., op. cit. in ref 21, p. 264.

in control of the electronic bill of lading until he transfers this control to a new holder, the carrier cancels the old private key and sends a private key to the new holder, which is supposed to be a particular person so that the carrier can send him the private key.

3.3. EXPIRY PHASE OF ELECTRONIC BILL OF LADING

The validity of the electronic bill of lading, actually, expires when its goal is achieved, which is to deliver the goods to the consignee or the last holder of it. However, in certain cases, the electronic bill of lading may expire before its purpose is achieved.

Expiry of the Electronic Bill Of Lading before Achieving Its Purpose
Among the cases of canceling the electronic bill of lading and terminating its validity before achieving its purpose are the following:

1. The refusal of the consignee to receive the goods. In this case, Article (182) of the Jordanian Maritime Trade Law stipulates that if the consignee refuses to receive the goods or shows up to receive them, the shipmaster may request the judiciary to sell the goods to collect the transport fee and deposit the rest of the unsold goods in warehouses at the expense of the owner of the right to receive goods.

This paragraph is consistent with paragraphs (2/b/3 and 4) of Article (4) of the Hamburg Convention. It requires the delivery of the goods to an authority or other third party to whom the laws or regulations in force at the port of discharge require delivery of the goods if the consignee does not receive the goods from the carrier. Paragraphs 2 and 4 of Article 48 of the Rotterdam Rules also provided for the sale of cargo because the goods could not be delivered to the holder of the right to receive them. The carrier could sell the goods and retain the proceeds of the sale for the benefit of the person entitled to receive them after deducting the costs of selling them and the freight. In this case, the electronic bill of lading loses the validity of granting the holder the right to receive the goods because the goods have been sold. Thus the electronic bill of lading has lost its aim of existence as a document representing the cargo.

2. Replacing the electronic bill of lading with a paper bill. Article 10 of the Rotterdam Rules stipulates the right of the holder and the carrier to agree to replace the electronic bill of lading with a paper bill and by the carrier's issuance of the paper bill of lading, the electronic bill of lading is canceled, and thus loses its validity⁵⁵.

⁵⁵ Shihab, A.: *The embodiment of the electronic transport document in the maritime trade sector*, Journal of Business Disputes, (23) 2017,p. 101.

3. Impossibility to deliver the goods. It could be impossible to deliver the goods to the consignee due to damage to the goods or sinking of the ship or disappearance of the ship, and then the powers of the electronic bill of lading will be canceled. Still, there will be a possibility to access its data to establish the rights of the holder to receive the goods and obtain compensation.

Expiry of the Electronic Bill of Lading Due to Achieving Its Purpose

The purpose of the bill of lading, whether traditional or electronic, is to deliver the goods to the owner of the right to receive them at the agreed-upon place. Delivery is a legal process by which the carrier's obligations end⁵⁶, where the delivery of the goods is the last stage of the implementation of the contract of carriage. It is noted that the Jordanian Court of Cassation has differentiated between the unloading process, as it is a physical process and the process of delivering the goods to the consignee as a legal process. It also required that the goods be delivered to the consignee and not simply being unloaded at the port of arrival⁵⁷. With the completion of this delivery, the traditional bill of lading loses its powers⁵⁸, and so does the electronic bill of lading both legally and technically. Technicality means that no person will have technical authority and control that allows the electronic bill of lading to be used again, except for the authority to view the data as it is a stored archive. This is what Article 47/1/c of the Rotterdam Rules stated. It indicated that "When a negotiable electronic transport record has been used, such electronic transport record ceases to have any effect or validity upon delivery to the holder".

4. CONCLUSION

Although the Jordanian Maritime Trade Law does not regulate the provisions of the electronic bill of lading, Articles (3), (4), and (6) of the Jordanian Electronic Transactions Law, and Article (61/c) of the Jordanian Customs Law and Article (7) of the Instructions for the Operation of Maritime Agencies and Shipping Intermediaries, it is a legal basis for the possibility of dealing with the electronic bill of lading in the Kingdom of Jordan. And although the Hamburg Rules 1978 did not regulate the provisions of the electronic bill of lading, Article (14/3) of the Hamburg Rules permitted that the signature of the bill of lading is affixed electronically, but it did not indicate the possibility of issuing

⁵⁶ Daradkeh, L., *The carrier's period of responsibility: a comparative study between the provisions of the Jordanian Maritime Trade Law and the Hamburg rules*, Al-Manara Journal, 13(9) 2007, p. 119.

⁵⁷ Daradkeh, L., op. cit. in ref 60, p. 119; Schmitz, T., op. cit. in ref 21, p. 265.

⁵⁸ Schmitz, T., op. cit. in ref 21, p. 265.

the entire bill of lading electronically. There is no doubt that as long as the signature is electronic, technically, the entire bill of lading is presumed to be electronic, since the connection of the electronic signature to a paper document is unreasonable.

The electronic bill of lading falls within the concept of “electronic Document”, which is a kind of “electronic record”. According to Article (17) of the Jordanian Electronic Transactions Law, when the electronic bill of lading is associated with a protected signature, it has the same authenticity in the proof as to the normal Document.

According to (CMI) rules, for the holder of an electronic bill of lading to transfer it, the carrier must cancel the old private key and issue a new one to the new holder. So the electronic bill of lading is traded only with the consent of the carrier. This is a matter of transfer of right rather than commercial endorsement, as the traditional bill of lading is traded by endorsement, which does not require the consent of the carrier. As for the electronic bill of lading, it is traded by transfer that requires the approval of the carrier.

There is a conflict between the provisions of Articles 9/1/a and Article57/2 of the Rotterdam Rules 2008. Article9/1/a of the Rotterdam Rules required, when issuing an electronic bill of lading, that it be transmitted to an intended holder. However, Article (57/2) of the Rotterdam Rules later stipulated that “whether it be made out to order or to the order of a named person” that means it is permissible to issue or transfer a negotiable electronic transport record to a bearer. Thus, it seems that there is a conflict between the two previous provisions, and it would have been better not to mention the first phrase “for the holder’s order” in Article57/2 so that it remains consistent with the text of Article9/1/a of the Rotterdam Rules.

The study recommends the Jordanian government’s accession to the 2008 Rotterdam Convention, as the legal structure that sets global rules to regulate the use of electronic bills of lading. It also recommends amending the Jordanian Maritime Trade Law to stipulate special provisions for electronic bills of lading in line with the Rotterdam Rules, especially if the Jordanian government decides not to join the Rotterdam Convention at present.

The study recommends deleting the first phrase “to order” contained in Article57/2 of the Rotterdam Rules 2008 so that it remains consistent with the text of Article9/1/a of it, which requires the issuance of an electronic bill of lading and referring it to an intended holder. Finally, it is necessary to conduct field studies on the obstacles to the use of the electronic bill of lading by maritime agents and brokers, port administration, customs department, clearance offices, and commercial banks in the Kingdom of Jordan.

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