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Chapter VI
Trade and transport efficiency

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Chapter 6

TRADE AND TRANSPORT EFFICIENCY

This chapter provides an update on the latest developments in the field of multimodal transport, including cargo rail services, information on the status of the main maritime conventions, and reports on relevant expert meetings and training activities organized by UNCTAD.

A. INTERNATIONAL REGULATION OF MULTIMODAL TRANSPORT

1. Ad Hoc Expert Meeting on Multimodal Transport

The Ad Hoc Expert Meeting on Multimodal Transport was convened by the Secretary-General of UNCTAD in Geneva from 26 to 27 November 2001 in order to review the impact on users and providers of multimodal transport of various laws and regulations adopted at the regional/subregional and national levels. The secretariat's document "Implementation of Multimodal Transport Rules" (UNCTAD/SDTE/TLB/2) was before the meeting for consideration.

The experts included representatives from operators and users of multimodal transport as well as from governments, members of the legal profession and academia. The experts recognized that the growing practice of multimodal transport had created the need for its regulation. This situation has prompted national governments and some regional and subregional organizations to enact laws on the subject. It was noted that while the United Nations Convention on International Multimodal Transport of Goods (1980) had not entered into force, it had significantly influenced such laws and regulations. Nevertheless, these laws and regulations diverged in important ways on key issues such as questions of liability, limitation of liability and time-bar. Despite many efforts in this area, there is no uniformity in the laws and regulations governing multimodal transport.

It was generally agreed that the existence of a widely acceptable global instrument would undoubtedly promote uniformity. The challenge was to create an instrument that would be considered feasible and acceptable by all interested parties, including providers, users and insurers of multimodal transport. It was, therefore, agreed that the matter required further study, particularly the key issues that would be governed by any such international instrument, including the appropriate basis for liability of the multimodal transport operator, limitation of such liability and the viability of a uniform system. Following the recommendations of the experts, the UNCTAD secretariat is preparing a study of the feasibility of a new international instrument on multimodal transport.

2. UNCITRAL Draft Instrument on Transport Law

In 2001, a UNCITRAL Working Group on Transport Law was established by the UNCITRAL Commission in order to consider elaboration of a new international instrument, initially focusing on port-to-port transport.[5] In view of the current proliferation of laws at the international level, this may be one of the most important developments in the field since the adoption of the United Nations Convention on the subject (Hamburg Rules 1978). The Working Group met in April 2002 in New York[6] to begin consideration of a "Draft Instrument on Transport Law" (Draft Instrument), which had been prepared by the CMI (Comité Maritime International) at the request of the UNCITRAL secretariat.[7]

The Draft Instrument consists of 17 chapters and, to a large extent, covers matters dealt with in existing maritime liability regimes, namely the Hague-Visby Rules and the Hamburg Rules. In addition, however, several chapters are devoted to matters currently not subject to international uniform law, such as delivery, freight and the transfer of the right of control and rights of suit. Not all of these areas would be subject to mandatory rules, and further debate may be needed before an international consensus emerges as to substantive non-mandatory regulation in these areas. The Draft Instrument also provides for electronic communication and the issue of electronic substitutes for traditional paper documents, largely by recognizing contractual agreements in this respect and by according electronic records the status of paper-based documents.

Importantly, and despite the limitation of the initial mandate of the Working Group to port-to-port transport, the Instrument has a broad scope of application and, as presently drafted, would cover all multimodal contracts for the international carriage of goods which include a sea leg.[8] As such, the proposed Draft Instrument represents an ambitious attempt to provide uniform regulation governing not only contracts for the carriage of goods by sea port-to-port but transport contracts generally. While uniform transport regulation may in principle be desirable,[9] it appears questionable whether the approach taken, namely the extension of a maritime regime to the whole transport chain, is the most appropriate solution.[10]

More particularly, there are a number of specific concerns regarding the extension of the proposed Draft Instrument to multimodal or door-to-door transportation:

The Draft Instrument provides for a "network system" of liability in cases where loss, damage or delay occurs solely before or after sea carriage. Certain mandatory provisions of applicable international conventions are given precedence. In some cases, therefore, where loss, damage or delay can be attributed to a stage of transport other than sea carriage, it would be necessary to identify any relevant international convention and apply certain of its provisions (on liability, limitation of liability and time for suit), while in all other respects (e.g. documentation) the provisions of the Draft Instrument would continue to be applicable. In a considerable number of cases, however, the provisions of the Draft Instrument based purely on maritime concepts and considerations would apply. Particularly in cases where loss, damage or delay cannot be localized, or where no relevant international convention is applicable, the Draft Instrument would provide the basis for the determination of liability. In a door-to-door context this raises particular concerns, given that the Draft Instrument contains provisions which allow the carrier to agree contractually that it shall not be responsible for certain parts of the transport or for some of a carrier's functions. As a result, a consignee of a door-to-door transport may be faced with the difficulty of identifying the responsible carrier or may find itself being responsible for certain of the carrier's functions.

At the request of the UNCITRAL secretariat, the UNCTAD secretariat has submitted a detailed article-by-article commentary on the provisions of the Draft Instrument.[11] Following is an extract from the commentary:

"**GENERAL OBSERVATIONS**

4. The Draft Instrument reproduced as Annex to UNCITRAL document A/CN.9/WG.III/WP.21 is entitled "Draft Instrument on Transport Law". To a large extent, it covers matters which are dealt with in existing mandatory liability regimes in the field of carriage of goods by sea, namely the Hague-Visby Rules[12] and the Hamburg Rules. In addition, the Draft Instrument also contains several chapters to deal with matters currently not subject to international uniform law, such as freight and the transfer of the right of control and of rights of suit. Special attention would need to be paid to some aspects of the Draft Instrument which present particular concerns:

Substantive scope of application

5. Despite the fact that the present mandate of the Working Group does not extend beyond consideration of port-to-port transportation, the Draft Instrument contains provisions which would extend its application to door-to-door transport (see also the title: "Draft Instrument on Transport Law"). According to the definition in Article 1.5 of the Draft Instrument, contracts for multimodal transportation involving a sea leg would be covered by the proposed regime. This gives rise to concern, as the Draft

Instrument has been drawn up by representatives of only maritime interests, the Comité Maritime International (CMI), without broad consultation of parties involved with and experienced in the other modes of transportation. As a result, the proposed regime is, in substance, based on maritime concepts and existing maritime liability regimes, which puts into question its suitability as a modern legislative framework to regulate liability where contracts involve several modes of transportation (e.g. air, road, rail or inland waterway carriage as well as sea carriage).

6. The current regulatory framework in the field of international multimodal transportation is notoriously complex and no uniform liability regime is in force internationally. As a result, liability is fragmented and cannot be assessed in advance.[13] While the development of uniform international regulation in the field may be desirable, any new international liability regime would have to offer clear advantages as compared with the existing legal framework in order to succeed. Any new but poorly designed or otherwise unsuccessful regime would only add to the current complexity without providing any benefits. The Draft Instrument does not appear to propose a solution which takes these considerations into account. It should be noted that, irrespective of the substantive merit of its provisions, the Draft Instrument does not provide for uniform levels of liability throughout all stages of a transport. Instead, it gives precedence to mandatory rules in unimodal Transport Conventions in cases where a loss or damage can be attributed to a particular stage of a multimodal transport (Art. 4.2.1). As a result of this 'network' approach to liability regulation, the determination of liability issues in door-to-door transactions would continue to involve the question of which particular regime may be applicable in a given jurisdiction and in a particular case. It is difficult to see in which way this approach would provide an improvement to the present regulatory framework. The analytical commentary in this document includes considerations relevant to the text of the Draft Instrument as presented. However, it is proposed to remove from the draft the provisions extending the scope of application of the regime beyond port-to-port transportation and to restrict the considerations of the Working Group, in accordance with its mandate, to maritime transport.

Substantive liability rules

7. The set of substantive liability rules proposed in the Draft Instrument appears to consist of a rather complex amalgamation of provisions in the Hague-Visby and Hamburg Rules, but with substantial modifications in terms of substance, structure and text. To a considerable extent, therefore, the benefits of certainty associated with the established meaning of provisions in existing regimes have been sacrificed. This should be borne in mind when considering the desirability of including in the Draft Instrument individual provisions which have been modelled on those in existing regimes, but where the context or wording has been modified significantly. Overall, the Draft Instrument appears to adopt a new approach to risk distribution between carrier and cargo interests, with a shift in balance favourable to carriers. In contrast to the Hague-Visby and Hamburg Rules, there is little evidence of any underlying intention to protect the interests of third parties to the contract of carriage.

Regulation of matters currently not subject to uniform international law

8. Chapters 9 (Freight), 11 (Right of control), 12 (Transfer of rights), and 13 (Rights of suit) in particular deal with matters of some complexity which are not currently regulated in any International Convention. The relevant national laws which are presently applicable in these areas are diverse and it can be assumed that there is no consensus at the international level. Against this background, any attempt at developing successful regulation needs to be made with a clear and carefully considered purpose and great attention to detail. As presented, the

proposed provisions contained in the Draft Instrument do not appear to be sufficiently clear and uncontroversial to make their inclusion in a new international regime desirable. The Working Group may therefore wish to consider more generally whether it is advisable at this stage to attempt to deal with these matters.

Structure and Drafting

9. Both in text and structure the Draft Instrument is unnecessarily complex and confusing. Unfortunately, little consideration appears to have been given to the need to ensure that internationally uniform rules are easy to understand and to apply. Many of the provisions are complicated, with extensive cross-referencing. Their understanding requires considerable legal expertise and often the proposed wording leaves much scope for interpretation. In many instances, lengthy and costly litigation may be required to clarify the meaning and application of provisions. There is obvious potential for considerable national differences in the interpretation of the proposed regulation; an outcome which would clearly be undesirable. The complexity of the Draft Instrument, as currently structured and drafted, makes assessment of its potential impact as a whole difficult. Unfortunately, there is thus the likelihood that efforts to amend the text of individual provisions may in turn create new problems which may not always be apparent. In fact, it is doubtful whether a text suitable for uniform regulation and workable in practice can be agreed on the basis of the Draft Instrument as presented."

B. TRADE FACILITATION

During 2001 there were a number of bilateral, regional and multilateral developments in trade facilitation. On 23 April 2001, Canada and Costa Rica announced a significant bilateral free trade agreement, with a whole chapter devoted to trade facilitation issues such as customs procedures and other trade formalities and a technical cooperation programme for implementing common procedures. More specifically, the countries agree to use risk assessment, exchange information (notably on best practices) and encourage cooperation and technical assistance for promoting compliance with the agreed measures. Moreover, they intend to pursue trade facilitation initiatives on a multilateral and hemispheric basis to reduce costs, make entry procedures transparent and ensure predictability for importers and exporters, and to commit themselves to consultations with representatives of the trading community. This is an outstanding example of what countries can achieve in terms of cooperation and capacity building in the field of trade facilitation.

Then, in June 2001, APEC trade ministers endorsed principles of trade facilitation worked out by this organization. The ministers recognized the importance of trade facilitation in freeing and opening trade and investment in the Asia-Pacific region and providing economic benefits to governments and businesses. They also recognized the importance of technical assistance and cooperation within APEC for applying the principles, in view of member countries' differing levels of development. Following are the non-binding principles endorsed by APEC trade ministers:

- Transparency
- Communication and consultations
- Simplification, practicability and efficiency
- Non-discrimination
- Consistency and predictability
- Harmonization, standardization and recognition
- Modernization and the use of new technology
- Due process
- Cooperation.

In November, the Declaration of the Fourth Ministerial Conference held in Doha (Qatar) under the auspices of WTO paved the way for a negotiation process and a potentially binding rule on trade facilitation. If explicit consensus is reached, the negotiation will start after the Fifth Ministerial Meeting to be held in Cancun, Mexico, in September 2003. In the meantime, the Council for Trade in Goods of WTO will review and as appropriate, clarify and improve relevant aspects of Articles V, VIII and X of the GATT 1994 as well as identify the trade facilitation needs and priorities of members, in particular those of developing countries.

Until now, trade facilitation activities have materialized mostly as a consequence of voluntary efforts by governments or the private sector in search of well-known benefits. Mandatory tools are still very rare in most trade-facilitation-related agreements, although these conventions are actually binding for contracting parties. Except for international transport agreements, which include simplified documentation requirements, most trade facilitation instruments recommend rather than impose or require measures viewed as effective or necessary. The situation may change radically in the coming years if WTO negotiations proceed as expected. They may lead to compulsory worldwide trade facilitation rules being part of a global compulsory legal environment for the trading system. This would constitute a major development requiring considerable effort from countries where trade facilitation lags.

C. PRODUCTION AND LEASING OF CONTAINERS

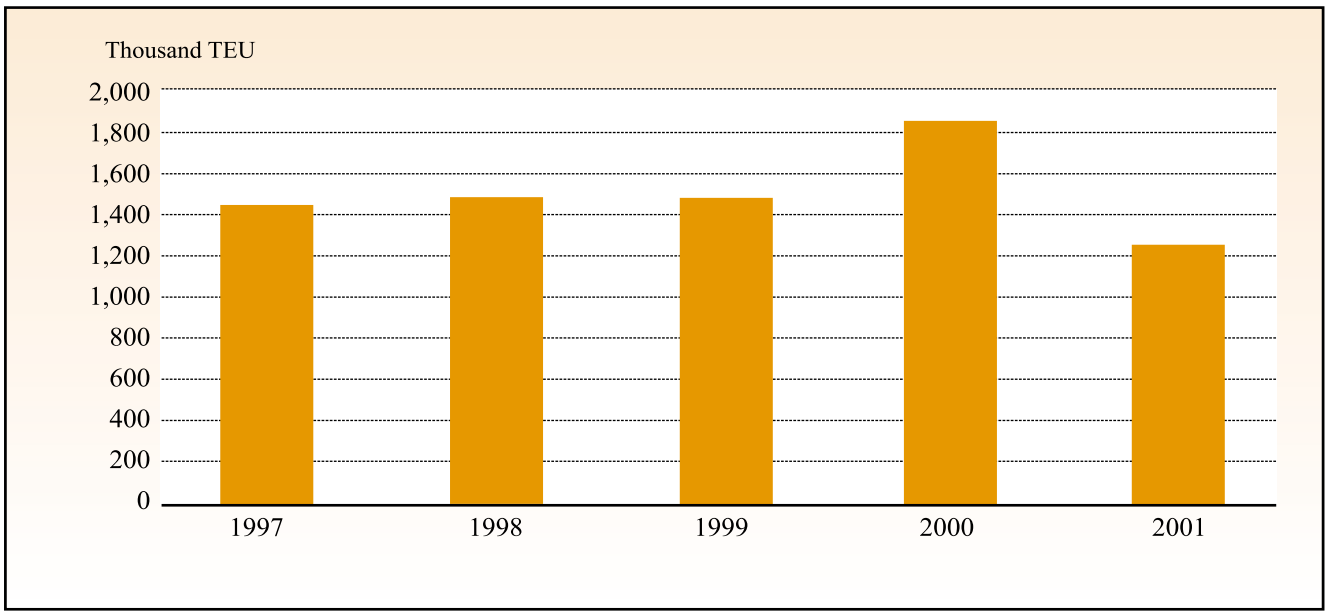
Revised figures for 2000 put container production at 1.9 million TEUs (see figure 9), of which 90 per cent were dry freight boxes. This high level of output required most container production plants, mainly located in China, to operate at full capacity all year. The majority of this total, about 1.25 million TEUs, was to fill the additional 0.6 million TEU slots of the expanded container ship fleet commissioned in 2001. About 0.55 million TEUs were needed to replace boxes disposed of during the year 2000, and another 0.1 million TEUs covered standard and regional box requirements from non-deep-sea carriers and land operators.

The world trade slump of 2001 caused a 34.2 per cent fall in container production to 1.25 million TEUs. The share of dry freight boxes fell to 85 per cent, with the balance being specials, reefers and other types of containers. This drop in box production was consistent with the sharp fall in container ship delivery and the low level of ordering for this type of vessel towards the end of 2001 and was also reflected by the 0.25 million TEUs of unclaimed new boxes at manufacturer yards. Plants were no longer operating at full capacity. There was large surplus production capacity in China, where only 50 per cent of the total capacity for dry freight production was in operation during 2001.

The evolution of the production of boxes other than the standard dry freight container unit is indicated in figure 10. Production of dry freight special containers (i.e. high cube, open-top, flat and others) continued its

Figure 9

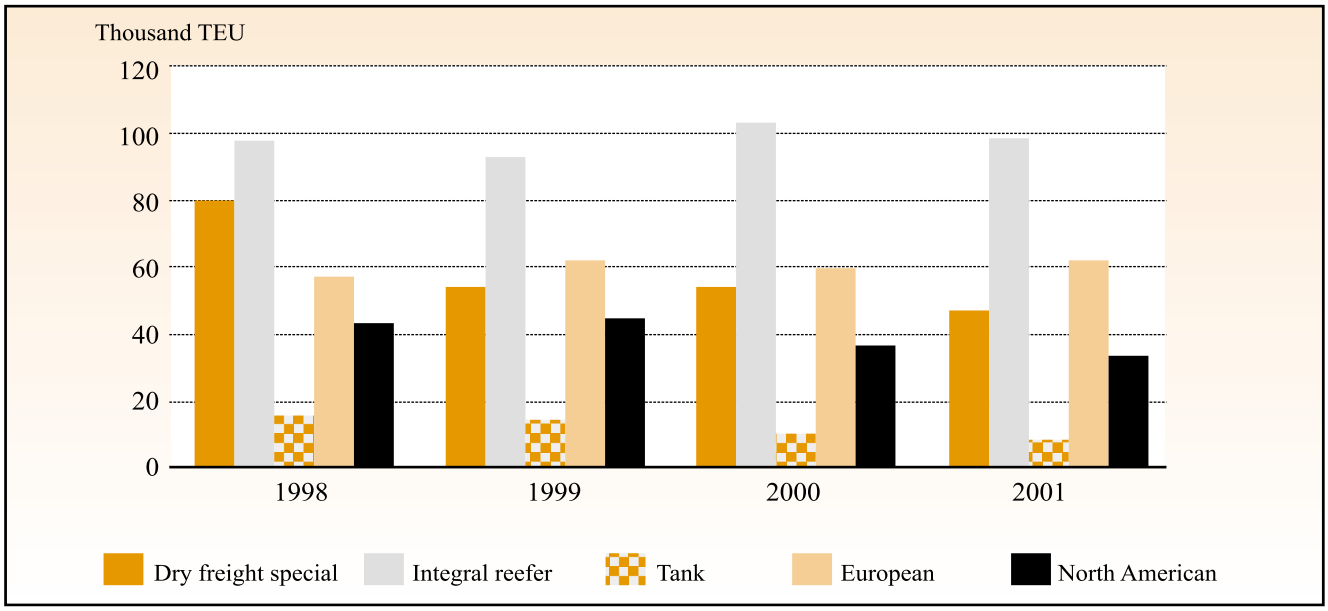
Annual total box production



Source: *Containerisation International Yearbook 2002.*

Figure 10

Annual production of boxes other than for standard dry freight



Source: Containerisation International Yearbook 2002.

downward trend. Production of integral reefer boxes peaked in 2000; the subsequent fall resulted from weaker demand despite the reduced price of these containers due to cheaper material costs. Production of tank containers mirrored that of dry freight special containers. Production of European containers, mostly swap-bodies, increased in 2001, suggesting higher demand for these boxes. Production of dry freight domestic specials (i.e. oversize non-ISO boxes) in the North American region continued to fall in 2001.

By mid-2001 the world container fleet was estimated at 15.1 million TEUs, of which 48.8 per cent was owned by container sea carriers, 45.1 per cent by container leasing companies and the remaining 6.1 per cent by others. As table 44 indicates, the utilization rate of the container leasing fleet went up during 2000 to reach 84.4 per cent at the beginning of 2001. However, poor box demand caused the amount of idle off-hired equipment to increase by close to 2 million TEUs and the utilization rate to decrease to about 75 per cent as the world leasing container fleet approached 7 million TEUs at the end of 2001. This resulted in lower revenues for container lessors.

Reduced prices for new boxes have whetted the appetite of lessees for new containers instead of the older ones and thus also contributed to reduced revenues for container lessors. As table 45 indicates, the brief increase in box prices during 1999–2000 did not last, and in the period 2000-2001 prices decreased 3.3 per cent, continuing the downward trend of past periods. Lessors, therefore, offered several options for leasing boxes to stop the decrease, using a blend of short- and long-term leasing contracts.

Table 44

Utilization of leased containers, 1997–2001

(percentages)

As of 1 January	Utilization level	% change
2001	84.39	6.8
2000	79.03	-2.4
1999	80.94	-4.7
1998	84.93	4.1
1997	81.55	

Source: Institute of International Container Lessors 13th Annual Leased Container Fleet Surveys.

Table 45

Rate of change in prices of new boxes

(percentages)

Year	Percentage change over previous year
1996	-12.5
1997	-11.9
1998	-8.1
1999	-17.6
2000	7.1
2001	-3.3

Source: *Containerisation International*, August 2001.

For instance, a number of top lessors moved empty boxes from high-cost depots located in low-demand areas in the United States, Europe and Japan to lower-cost depots located in high-demand areas such as China and developing Asia. Up to $30 million was spent yearly on chartering vessels to move empty containers. However, the attractiveness of moving off-hired boxes into China was overshadowed by the already high stock of unclaimed new containers.

The low demand for leased containers was also caused by the improved box utilization of the container fleet owned by sea carriers. Pooling of equipment between subsidiaries and alliance partners and use of e-commerce, especially in the area of Internet-based management and online equipment exchange services, contributed to the more efficient use of carriers' own containers.

D. CARGO TRANSPORT SERVICES IN THE RAIL INDUSTRY

1. Improving services in the rail industry

In 2001 capital investment for rail freight services allowed these to continue to operate at an adequate level of efficiency. At the beginning of the year, the Norfolk Southern Corp. budgeted $806 million for capital improvements, of which $449 million was for roadways and $256 million for equipment. Roadway spending included $264 million for rail, cross-tie, ballast and bridge programs; $63 million for new or improved intermodal facilities; US$ 35 million for marketing and industrial development initiatives; $35 million for signal and electrical projects; and $23 million for environmental projects and public improvements such as grade-crossing separations and crossing-signal updates. Canadian National Railroad (CN) also revealed its plan to continue to upgrade equipment. At the time of this announcement, CN received the last 40 Dash 9-44CW locomotives of the 360 units purchased over the five previous years. The new engines were 17 per cent more fuel-efficient than older locomotives.

In Europe, a similar effort to improve rail services was also evident. In the last quarter of 2001, for instance, SNCF, the French railway company, and Germany's Deutsche Bahn joined forces to develop ways of increasing cross-border freight traffic between the two countries. This initiative was motivated by the limited rail traffic between the two countries (a situation that has persisted despite the fact that they have the largest amount of freight traffic in Europe) and in anticipation of the increased competition that would result from the deregulation of European Union cross-border traffic in 2003. In the United Kingdom, the Strategic Rail Authority revealed a 10-year investment plan for improving the rail system, including modernization of the track and signalling system, wagon acquisition, improved staff training and the addition of tracks. Financing will come from the fund set aside by the Government of the United Kingdom, with $6 billion earmarked for improving rail freight services.

In late 2001, the United States Surface Transportation Board reviewed a number of plans for future rail investments. Among them was the proposal of the Dakota, Minnesota and Eastern Railroad Corporation to construct a 450-kilometre rail line into Wyoming's coal-rich Powder River Basin.

Joint services were also used to achieve higher efficiency in serving customers. For example, BNSF together with CSX International expanded its Ice Cold Express service into a coast-to-coast service covering southern California, Chicago, Montreal and Toronto, and the states of New York and New Jersey. Together with NS, BNSF consolidated services to provide transcontinental line-haul service with a shorter transit time for time-sensitive premium freight moving between southern California and Rutherford, Pennsylvania, and Croxton, New Jersey. This initiative was possible because BNSF owned the line-haul service between southern California and Chicago while NS owned the line between Chicago and the East Coast.

Security measures adopted in the United States after the terrorist attack of 11 September 2001 affected the efficiency of rail transport operations. Providing increased security for and control of rail freight with minimum traffic disruption was a challenge. Immediate measures taken involved the transport control of hazardous materials, their routing away from populated areas, and increased vigilance and cooperation with authorities to prevent possible threats. Long-term measures adopted include increased cooperation with the military; significant efforts to make security requirements compatible with trade needs by working closely with customers and national security agencies; the establishment of a Rail Freight Industry Crisis Centre; more frequent patrols and improved security at critical facilities, including a more secure information system; selected security constraints on operations near major public areas; and more thorough prehiring background checks.

Steps were taken by Canada and the United States to improve security, notably by increasing controls at transit points between the two countries. A declaration containing a set of action plans aimed at ensuring the secure flow of people and goods, secure infrastructure, and improved coordination and information sharing was signed in December 2001. Measures to ensure the flow of goods included plans for the establishment of complementary systems for commercial processing; the development of an integrated approach for processing truck, rail and marine cargo away from the border; the establishment of criteria for the creation of small, remote joint border facilities; the sharing of customs data; and the exchange of information and analyses to control marine in-transit containers.

2. Mergers and liberalization

In North America, CN proposed the acquisition of Wisconsin Central Transportation Corporation (WCTC) in 2001. After having its earlier $6.2 billion merger proposal for BNSF turned down by the Surface Transportation Board (STB), CN was cautious in presenting this $1.2 billion purchase proposal. The proposal suggested no detrimental effect on competition, as it would be a straightforward end-to-end integration without any interruption of current service. Moreover, the Railroad Transportation Committee of the National Industrial Transportation League supported CN's proposal as long as CN and WCTC could provide assurance that they would maintain all currently available interchanges, both physically and economically (i.e. retaining currently applicable rates and charges for those interchanges); would continue to provide the same standard of service after the merger; and would provide remedies if service failed to meet existing standards.

The Canadian Competitive Bureau and the STB finally approved the proposal. It was considered a minor merger, as it would have little effect on the existing competition. The slight change in operations and services was not expected to have a major impact on the environment and thus relieved CN of the requirement of a STB environmental review. The merger integrates CN's 18,600 kilometres of operating track in Canada and 6,260 kilometres in the United States with WCTC's 4,560 kilometres of track and track rights in the states of Wisconsin, Illinois, Minnesota, and Michigan (the Upper Peninsula) and the province of Ontario. In principle, no track segments would be abandoned as a result of this merger. To ensure this, the STB insisted on receiving progress reports for one year on the result and impact of the integrated operations.

In Australia, the privatization of rail companies was seen as a way of achieving more efficient and faster services and better rates. In 2001 the National Rail Corporation (NRC) and the New South Wales Freight Corp (NSWFC) were put up for sale. The NRC controlled access to the interstate standard-gauge network linking all state capitals and their ports, while NSWFC controlled access to and operation of the rail network of New South Wales, including the port of Sydney. The aim was to achieve a more competitive industry and increase the share of rail transport in the domestic and international freight markets. To facilitate the process, the federal and state governments agreed to recognize one mutually acceptable bidder identified through a tender process to be carried out separately by each government. The successful bidder would be free to outsource operations to small companies better attuned to the needs of regional shippers. Outsourcing is also happening in the western and southern regions of Australia. Managing and improving services in long-distance haulage is the main concern of larger operators which leave the smaller ones to service local markets.

E. THE STATUS OF CONVENTIONS

There are a number of international conventions affecting the commercial and technical activities of maritime transport. Box 3 gives the status of international maritime conventions adopted under the auspices of UNCTAD as of August 2002. Comprehensive and updated information

Box 3

Contracting States of selected conventions on maritime transport as of 31 August 2002

Title of Convention	Date of entry into force or conditions for entry into force	Contracting States
United Nations Convention on a Code of Conduct for Liner Conferences, 1974	Entered into force 6 October 1983	Algeria, Bangladesh, Barbados, Belgium, Benin, Bulgaria, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chile, China, Congo, Costa Rica, Côte d'Ivoire, Cuba, Czech Republic, Democratic Republic of the Congo, Denmark, Egypt, Ethiopia, Finland, France, Gabon, Gambia, Germany, Ghana, Guatemala, Guinea, Guyana, Honduras, India, Indonesia, Iraq, Italy, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Mozambique, the Netherlands, Niger, Nigeria, Norway, Pakistan, Peru, the Philippines, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Sierra Leone, Slovakia, Somalia, Spain, Sri Lanka, Sudan, Sweden, Togo, Trinidad and Tobago, Tunisia, United Kingdom, United Republic of Tanzania, Uruguay, Venezuela, Yugoslavia, Zambia **(78)**
United Nations Convention on the Carriage of Goods by Sea, 1978 (Hamburg Rules)	Entered into force 1 November 1992	Austria, Barbados, Botswana, Burkina Faso, Burundi, Cameroon, Chile, Czech Republic, Egypt, Gambia, Georgia, Guinea, Hungary, Jordan, Kenya, Lebanon, Lesotho, Malawi, Morocco, Nigeria, Romania, Senegal, Sierra Leone, Saint Vincent and the Grenadines, Tunisia, Uganda, United Republic of Tanzania, Zambia (**28**)
United Nations Convention on International Multimodal Transport of Goods, 1980	Not yet in force – requires 30 contracting parties	Burundi, Chile, Georgia, Lebanon, Malawi, Mexico, Morocco, Rwanda, Senegal, Zambia **(10)**
United Nations Convention on Conditions for Registration of Ships, 1986	Not yet in force – requires 40 contracting parties with at least 25 per cent of the world's tonnage as per Annex III to the Convention	Bulgaria, Côte d'Ivoire, Egypt, Georgia, Ghana, Haiti, Hungary, Iraq, Libyan Arab Jamahiriya, Mexico, Oman **(11)**
International Convention on Maritime Liens and Mortgages, 1993	Not yet in force – requires 10 contracting parties	Monaco, Russian Federation, Spain, Saint Vincent and the Grenadines, Tunisia, Vanuatu **(6)**
International Convention on Arrest of Ships, 1999	Not yet in force – requires 10 contracting parties	Bulgaria, Estonia, Latvia, Spain **(4)**

Source: For the current official status of these conventions see *www.un.org/law.*

about these and other relevant conventions is available on the United Nations website at *www.un.org/law*. This site also provides links to, *inter alia*, the following organizations' websites, which contain information on the conventions adopted under the auspices of each organization:

- The International Maritime Organization (IMO) *www.ilo.org/home.html*
- The International Labour Organization (ILO) *www.ilo.org* and more specifically *ilolex.ilo.ch:1567/public/english/docs/convdisp.htm*
- The United Nations Commission on International Trade Law (UNCITRAL) *www.uncitral.org*.

F. INFORMATION & COMMUNICATIONS TECHNOLOGY IN TRANSPORT AND TRADE FACILITATION

1. Expert meeting on Electronic Commerce and International Transport Services: Best Practices for Enhancing the Competitiveness of Developing Countries

The Expert Meeting on "Electronic Commerce and International Transport Services: Best Practices for Enhancing the Competitiveness of Developing Countries" was convened under UNCTAD's auspices in Geneva from 26 to 28 September 2001. Experts examined the impact of electronic commerce on international transport services, including the issue's economic, operational, documentary and legal aspects. They recognized the importance of e-commerce as a vehicle for improving the efficiency of transport services and promoting the participation of developing countries in global trade.

Experts from developing countries noted that their difficulties with the increased use of e-commerce in transport resulted from inadequate basic infrastructure, the limited availability of computers and Internet access, and lack of basic knowledge. In some cases obsolete transport systems and communications infrastructures also played a role. The experts expressed the view that investment in transport and in information and communication technology (ICT) needed to be promoted and coordinated at the national level, with Governments being invited to become model users of ICT in dealing with citizens. The experts considered that a regulatory environment should be introduced that would favour a reduction in telecommunications and Internet charges and that North-South and South-South joint ventures between transport operators would allow a beneficial transfer of know-how and capital for developing national capacity.

Experts from developed countries explained that the use of ICT is an integral part of the business plan and commercial success of companies. ICT is used to optimize information flows within the company and also to communicate with customers. They expressed their full confidence in the transfer of information via the World Wide Web. In the field of transport, representatives of two major carriers, Maersk Sea Land and UPS, said that these companies are working to establish partnerships with customers based on agreed procedures that simplify transport services. Experts explained that the use of ICT in ports is geared to developing port community platforms on which exchange of information between different parties can be done securely and confidentially and at different levels of technological sophistication. Paramount for building these platforms is the involvement of customs and the port authority and the use of simplified and transparent procedures. In this connection, useful guidelines are provided by CEFACT Recommendation No. 4 on Trade Facilitation Bodies *(see www.unece.org/cefact)*.

The experts also considered the legal uncertainties arising from the use of electronic means of communication in international trade and transport. In particular, it was noted that national laws and transport conventions require "written", "signed" and "original" documents. In this context, it was explained that the UNCITRAL Model Laws on Electronic Commerce (1996) and on Electronic Signatures (2001) aimed at providing States with a set of internationally acceptable rules for fostering e-commerce. More specifically, Articles 16 and 17 of the Model Law dealing with the issue of carriage of goods provide general principles pertaining to electronic transport documents. Future work in UNCITRAL would focus on the preparation of an international convention on electronic contracting.

In discussing the role of transport documents in international trade, the experts highlighted the functions of bills of lading as evidence of contract, receipts for goods and documents of title, as well as their essential role in letters of credit. They stressed that in most transactions information and evidence of facts were the essential ingredients, and that negotiable documents were required only for transferring title to goods in transit. In this connection, it was recalled that the ICC Uniform Customs and Practice for Documentary Credit (UCP 500)

included non-negotiable sea waybills and stressed the importance of evidence and authentication issues.

The experts considered the challenge of replacing the negotiable bill of lading with an electronic alternative and the need for an internationally agreed legal solution. They also recognized the value of contractual arrangements as a means for supplementing the existing transport laws and conventions in an electronic environment. Two contractual systems aiming at replacing trade and transport documents with electronic substitutes were reviewed: @GlobalTrade and Bolero. The former was an open system at the pilot stage in which users would not need to pay registration charges or acquire new software. Applicants would pay their credit-issuing banks a fee for issuance of letters of credit through @GlobalTrade. This system uses non-negotiable electronic sea waybills. The Bolero system is a closed one, available only to members. As the Bolero Bill of Lading was not recognized by law, the Rule Book provided the contractual basis that was binding on all members. After two years in operation, the challenges are encryption regulations and the need to build the confidence of potential customers.

The experts agreed on a number of recommendations addressed to national Governments and enterprises, to the international community and to UNCTAD. These recommendations can be found in the document TD/B/COM.3/38–TD/B/COM.3/EM.12/3 of October 2001 (*see www.unctad.org/en/pub/pubframe.htm*).

2. Electronic commerce and international transport services: recent developments

The Commission on Enterprise, Business Facilitation and Development at its sixth session, held in February 2002, having examined the recommendations adopted by the Expert Meeting on Electronic Commerce and International Transport Services, recommended that the UNCTAD secretariat do the following

> "(a) Keep under review and monitor developments relating to economic, commercial, legal and infrastructure aspects of electronic commerce affecting international transport services, and analyse the implications thereof for developing countries, and furthermore collect and disseminate this information to member countries."[14]

In April 2001 the UNCITRAL Working Group on Transport Law began consideration of a Draft Instrument on Transport Law with a view to establishing a new international instrument initially focusing on port-to-port transport.[15] The Draft Instrument has been prepared by the Comité Maritime International (CMI) and, as currently drafted, covers multimodal transport involving a sea leg. The important feature of the Draft Instrument is that it envisages the use of "electronic records" and "paper transport documents" in both negotiable and non-negotiable forms. It grants electronic communications the same legal status as paper transport documents. The Draft Instrument leaves all matters relating to the use of a negotiable electronic record subject to agreement between the carrier and the shipper and permits the parties to switch from a negotiable transport document to a negotiable record and vice versa. Thus, concerns have been raised regarding the protection of third parties and problems which may arise in the process of switching from one form of documentation to another. Furthermore, the draft is at its preliminary stage and will require considerable amendment. At the request of the UNCITRAL secretariat, the UNCTAD secretariat has provided a detailed article-by-article commentary on the Draft Instrument. The commentary is available at both the UNCTAD[16] and UNCITRAL[17] websites.

If and when agreement on a new international liability regime is reached, the inclusion of provisions on electronic communications will provide an important step in removing legal barriers to further development of international transport. It should be recalled that requirements for a paper "document" and "manual signatures" in the existing transport conventions such as the Hague and Hague-Visby Rules constitute important obstacles to the use of electronic means of communications.[18]

3. Development of ICT in maritime transport and ports

A survey conducted in 2001 on the status of 150 ICT companies providing Internet-based services in the transport field indicated that about one-third of these companies had gone bankrupt, 18 per cent were inactive, 17 per cent had been purchased by other companies, 16 per cent were revising their business model and only 16 per cent were conducting business as originally planned. There were several reasons for this result. A number of cargo auction portals for liner shipping did not gain the favour of lines because they focused only on price, omitting descriptions of services, which are an important element for shippers; nor were they supported by shippers, since the anonymity of quotations put a

carrier known to the shipper on the same footing with other carriers. The fact that the portals bypassed freight forwarders and took no responsibility for the results of transactions compounded the above problems. A number of portals aiming to replace shipbrokers underestimated the importance of personal contacts in these transactions. Other portals that provided information for transport decision makers were deemed to require high computer literacy from users and to offer them an excessive number of options. However, portals dealing with the exchange of equipment, such as containers, fared better.

Although the prospects for the surviving companies are better, their success is not guaranteed. Some carriers are providing shippers with flexible options for accessing their own portals with maximal flexibility and convenience. NYK, while developing its own e-commerce initiative, Pegasus, has announced that it will join the three main portals, GT Nexus, INTTRA and Cargo Smart. Other carriers are part of large conglomerates, which include large ICT companies serving a variety of industries. Maersk Data Group has more than 2,500 staff members and works with the banking, finance, insurance and agriculture industries and the military as well as in shipping. The market share of business conducted online is definitely growing: during 2001 the United States domestic carrier CSX reported an increase of online bookings from 15 to 55 per cent.

ICT companies appear to have less difficulty helping carriers and transport service providers execute joint processes more efficiently. SynchroNet Marine (*www.synchronetmarine.com*) offers four products for optimizing container management. One product maximizes the potential for cooperative container management between short-sea and deep-sea carriers in Asia and Europe. Another allows carriers to search databases of available containers by origin and destination and for immediate or spot cargo bookings. Yet a third product enables carriers to reposition containers along many routes. The fourth product was launched in the first quarter of 2002 in conjunction with the port authority of Oakland (USA) and trucking companies serving the port. It aims to rationalize container movements in the metropolitan area and thus reduce gate and road congestion, as well as to minimize movements of empty trucks and protect the environment.

Using ICT for port communities provides a major opportunity to make joint transport processes more efficient. Seaport activities require the handling of large information flows, which involve many parties with different commercial and administrative objectives. Over the years, tailor-made ICT networks have been built in some ports, reflecting the institutional arrangements and commercial and administrative practices of port authorities, shipping agents, port and terminal operators, customs, freight forwarders, and so forth. Experience indicates that a long-term and integrated vision of the port community is a prerequisite for building up ICT networks that adequately serve those parties.

The Belgian ports provide a good illustration of the process. The complex ICT networks required by the large port of Antwerp (see box 4 for details) have their counterpart in the Enigma (Electronic Network for Information in the Ghent Maritime Area) network, a compact equivalent recently established in Ghent, another Flemish port (2,892 vessels and 24 million tons in 2000) that is smaller than Antwerp's and mostly serves bulk trades. Enigma was developed during 1999–2000 to provide a centralized platform for handling all data and communications concerning seagoing vessels' movements and their services, including stevedoring. Since the port is located inland, information exchanges for incoming vessels include their movements at sea, in rivers, locks and canals, and then within the port area. Connections to other services, such as those of the Belgian customs, or to other ports concerning advance data on hazardous cargo are included. Access to the server is through Internet sites or a local area network. A commercial version of this network is being launched by Cosmos, which is one of the two leading suppliers (along with Navis) of software for managing data and cargo handling systems in container terminals.

Ghent's approach to developing ICT networks mirrors that of Valencia, a Spanish port of similar size (5,677 vessels and 21.2 million tons in 2000) that is however, mostly involved in container trade. In effect, the initiative for building the network comes from the port authority and focuses on services provided to the vessels. Work is underway to enlarge the network to other parties of the port community, notably those dealing with cargo clearance (i.e. customs agents), which use the customs electronic services. Inforport Valencia is the company in charge of maintaining and developing this network, and the Valencia Port Authority and Portel are its main shareholders. The latter is a joint venture between the Spanish Port Authority and the Spanish Telephone Company (Telefonica), which promotes the use of ICT in ports.

In these two examples, the customs authorities maintain their own national networks, notably for cargo declaration, clearance and duty assessment, which are used by parties dealing with cargo. Work to link these networks to those of the port is still in process.

G. OTHER DEVELOPMENTS

During 2001 a comprehensive review of the 22-year-old Trainmar programme was conducted by an independent evaluation team. The team recommended that pedagogic capacity-building and substantive support be continued but that the Trainmar programme in its present form be terminated. The evaluation team also made a number of other recommendations, notably for dismantling the Trainmar Central Support Team and strengthening the Human Resources Development (HRD) Section with pedagogical and substantive resources, developing an integrated curriculum in the port sector, using modern information and communications technologies in future activities and elaborating a coherent and comprehensive strategy for training activities which are to be regarded as means for capacity building in the port sector.

Collaboration between the HRD and the Transport Section within UNCTAD's Division for Services Infrastructure for Development and Trade Efficiency was reinforced to gain synergies from pedagogical and substantive matters. The HRD Section set up a website, *www.unctad.org/hrdsite*, to provide free information on the section's training activities as well as to exchange materials and information on a members-only basis. It also organized an international meeting in collaboration with the Douro and Leixoes Port Authority of Portugal for developing an international strategy for human resources development for port communities in developing countries.

The meeting took place in Porto (Portugal) from 13 to 16 May 2002 and was attended by more than 68 delegates from 30 countries. The strategy was based on four elements: an integrated approach to capacity building and training; forging partnerships among port training institutions of developing and developed countries; the intensive use of distance-learning techniques; and the development of a website to exchange information and promote cooperation between partners. Specific plans of action were developed for English-, French- and Portuguese-speaking developing countries. These plans take into account the different levels of implementation and commitments for the Port Certificate Programme and seek to promote a balanced institution-building capacity for port communities of developing countries. They also promote partnerships between port communities located in different regions and pave the way for establishing partnerships with public- and private-sector institutions.

Box 4

ICT development in a large port: The case of Antwerp

Antwerp is one of the largest ports in the European Union. In 2000 more than 16,000 seagoing vessels and 57,000 barges visited the port, which handled 130 million tons of cargo. The port is located mostly on the right bank of the Scheldt River but is presently expanding to the left bank. The port's total surface exceeds 13,000 hectares, and it encloses 2 hectares of deep water, 130 kilometres of berths, 276 kilometres of roads and 960 kilometres of railway tracks. The Antwerp Port Authority provides the infrastructure, and private-sector companies and operators are in charge of port activities.

Initiatives to implement ICT use for port activities were begun in the mid-1980s by non-profit organizations set up by the public and private sectors. The City of Antwerp set up Telepolis to provide ICT services to the port authority, to the city's public services (i.e. the police and the fire brigade) and to its health and social care system.

APICS (Antwerp Port Information and Control System) was defined and developed during 1985–1988 and finally commissioned in April 1989. APICS is the information tool for planning, assistance and control relating to maritime and inland navigation for all vessel movements for this port. Users of APICS are the Harbour master office, the tug service, the financial service and the port authority's general management functions. The information provided by the system ensures vital functions such as deployment of tugs and pilots, planning of lock and bridge operations, billing, concession management and the collection and processing of statistics.

Box 4 (continued)

A major subsystem of APICS is the Vessel Traffic Service (VTS), which enhances safe navigation in heavy-traffic areas within the port and allows better lock planning and the ordering of pilots and tugs in and out of controlled waters. This service comprises the following elements: a Bright Display Radar system located in five critical areas of the port; a closed-circuit television with high sensitivity, panoramic tilt and zoom enable colour cameras to control two lock complexes; and two environmental wind sensors mounted on 10-metre poles with local and remote display for warning about severe wind conditions. Real-time information on the situation of locks and bridges and meteorological conditions is available in a control room, with additional links to the police and fire brigade. Road traffic panels warn drivers about conditions in critical areas. Telephone, normal, VHF (very high frequency) and UHF (ultrahigh frequency) radio communications are used to maintain ongoing contact with vessels, barges, tugs and pilots.

APICS carries numerous communications for the more than 300 terminals and printers scattered around the port. A dedicated coaxial cable is installed on the right bank of the river, and leased lines are being used on the left bank and in the Netherlands. Radio frequency modems provide communications for data, voice and video signals and radar. Online and offline back-up systems ensure permanent operation. The central database has 20 gigabytes of information, and more than 700,000 EDI (electronic data interchange) messages are handled each year.

In 1986, Seagha was established by Antwerp's Chamber of Commerce and Industry together with the six trade organizations of the port (two for cargo handling companies, two for freight forwarders, one for shipping agents and one for shipowners). This organization aims to convey the expanding volume of EDI communications, which at that time were transmitted between parties on a bilateral basis, through a single and reliable platform. In this way each party can use a single point of entry for all its incoming and outgoing communications.

The product Seagha Clearing enables each party to reach all its commercial partners even if they were connected to different EDI networks and use different connection methods (e.g. telephone, fax, email, web page, EDI). It also enables connection to networks located elsewhere (e.g. in other ports). More specifically, this product allows transmission of standardized EDI and free-format messages, connections through X400 to an unlimited list of international networks worldwide, archiving of messages, tracking of sent and received messages and related follow-up, and direct access through the following protocols: TCP/IP, X25, X400 and OFTP. Parties using it include importers, exporters, banks, truck companies, sea carriers, barge carriers, freight forwarders, terminal operators, terminal depots, Belgian railways, Belgian Customs, tallying services, and others. The number of companies and messages grew steadily from 1993 to 2000, from 132 companies exchanging 500,000 messages to 465 companies exchanging 5,100,000 messages.

The product Seagha Bridge is conversion software which translates between the individual format used by a given party and the UN/Edifact standard used by Seagha Clearing. The product Mapping allows Seagha users to convert their messages into another format such as EDI, email, XML, HTML or ANSIX12, which commercial partners may prefer. Products for PC applications are also available and may be of interest to companies having medium- or entry-level technological capability: Expag exchanges information between freight forwarders and agents; Sadbel allows communication with customs; Dangerous Goods sends dangerous goods notifications; and Shipbrokers' Clerk System allows connection to the port authority's APICS system.

Efforts are underway to replace all PC applications with web-based ones, which will use Edifact messages in the background. In early 2002 Vessel Manager was launched. This web version of the Shipbrokers' Clerk System has two modules: BERTH and WASDIS. The first offers traditional functions such as notification of incoming vessels, requests for shifting, and priorities for services. The second allows compliance with the European Community Directive that combats illegal dumping by asking users to send compulsory electronic waste disposal notifications as of mid-January 2002.

Source: Presentation made at the workshop "IT and ETI in Transport Business", Antwerp, Belgium, 11-15 March 2002.