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Draft

Report and Strategic Recommendations from the CEN Workshop on

Intermodal and Interoperable Transport in Europe

Part 1: Freight Transport

1999-12-13/14

at The European Commission, Transport Directorate General
Charlemagne Building, Rue de la Loi 179, BE-Brussels 1049, Belgium

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JANUARY 1999

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from the CEN Workshop on

Intermodal and Interoperable Transport in Europe - Part 1: Freight Transport

on13th and 14th December 1999

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Charlemagne Building, Rue de la Loi 179, BE-Brussels 1049, Belgium

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This workshop was launched according to CEN/BT Resolution (BT 25/1998) with the scope to organize a special workshop on Multimodal and Interoperable Transport Standardization reflecting the change in the European transport system both for passengers and freight. A subdivision in two separate workshops was decided, it is why a separate workshop on passenger transport has been planned for spring 2000. This report, conclusions and strategic recommendations therefore concern Intermodal and Interoperable Freight Transport in Europe.

Stakeholders:

European and national associations within the transport industries
European and national authorities
Inland waterways
Railway companies
Research
Road hauliers
Ports
RTTT (road transport and traffic telematics)
Shipping agencies
Ship yards
Standardization committees
Suppliers to road hauliers, railways and inland waterways
Terminals
Test houses
Universities

Summary

CEN organised the 13th and 14th of December 1999 a workshop on Intermodal and Interoperable Transport hosted and supported by The European Commission, Transport Directorate General. The scope of the workshop was to consider the future needs for standardisation in order to operate a seamless intermodal transport system for freight in Europe. A similar workshop on passenger transport is expected in the spring year 2000. More than 100 European stakeholders participate in the freight workshop, December 1999. After 2 days of debate between stakeholders from the transport industry the workshop came to a number of important decisions.

In order to support the ongoing standardisation work on the definition of transport service (Code of practice and Quality Declaration and Environmental Declaration) the workshop proposes to start up work on procurement methods for documentation of environmental performance, and Food hygiene self-assessment control system for the transport industry, and Transport of living animals. The workshop notes the overlapping scopes within the field of logistics and transportation and recommends starting up an integration process involving the concerned TCs. Many European cities are introducing limitation for traffic in city centres. The workshop proposes to organise a city logistic forum to consider the position for CEN incl. the evaluation of the needs for a small loading unit.

After several presentations on information technology in the transport sector the workshop identified a number of practical and legal problems for both EDIFACT and CEN/TC 278. The workshop recommended that interested parties take more part in and ensure the coherent ongoing standardisation of freight transport IT. In the debate it became clear that a number of public and private research project was performed without contact to the ongoing standardisation process. In order to improve the work on standardisation and integrate other activities the workshop proposes to organise a specific IT Workshop.

For technical transport equipment including multimodal units the workshop had a presentation on the CEN Workshop of 1st of July on the same subject. This workshop recommends starting up new work on different new intermodal units. After a presentation of Austrian standardisation on freight terminals the workshop recognised the needs for information on performance on EU terminals and will consider establishing a code of best practice on the basis of ongoing projects.

The European Commission is in the middle of an ongoing project on pricing the external effects of transportation. The CEN workshop concludes that there is a need for a closer dialog between CEN and the Commission in order to evaluate the merits for standardisation. On subjects as labour conditions and legal conditions the workshop came to the conclusion not to start up new work. But the workshop have presented a large number of legal problems both in single, modal, and multimodal transport, and the workshop concluded that the Commission is the most appropriate body to address this problem without undue delay.

Organisation of new work items

After the workshop the rapporteur has made a proposal to organise the proposed new work items within the CEN system:

New work item	Proposal for organisation in the CEN system	Liaison with
Procurement methods for documentation of environmental performance of transport systems in transport chains	TC320	ISO/TC 22
Food hygiene self-assessment control system (according to Directive 93/43/EEC on hygiene and foodstuffs)	TC320	New CEN/TC
Performance on transport on living animal	TC320	
Co-ordination of overlapping scopes of TCs within logistics and transportation	BT	Rapporteur
Organisation of a forum of future standardisation requirements for freight transport services and logistic systems	Rapporteur	
Organisation of a city logistic forum	Rapporteur	
Organisation of a new workshop on transport IT in order to integrate other ongoing private and public activities	TC278	ISO/TC 204 and EDIFACT
Standardisation of an intermodal unit of European semi-trailer size, stackable and offering optimum internal space for European standard loads	TC119	ISO/TC 104
Standardisation of a small container unit based on the European action COST 339	TC119	COST 339 and ISO/TC 104
Environmental declaration of the impact of water based transport including assessment of emission data and data of energy consumption and comparison	TC320	CEN/TC 15 and TC 300 ISO/TC 8
Coordination of the technical design of different intermodal transport system (incl. the standardisation of a intermodal transport system and	TC 119	TC 15 TC 300 ISO/TC 8 and ISO/TC 104

equipment for water based transport) in order to obtain a coherent European Standard		CEN/TC 256
Standardisation on performance on terminals incl. a best practice for terminals	TC 320	Other TCs
Standardisation in relation to the European project on public pricing on external effects of transportation	EEC	Rapporteur

Scope

The scope of the workshop is to consider the future needs for standardization in order to operate a seamless intermodal transport system for freight and passengers in Europe. *(This Part I is only for freight)*

Opening and welcome

With reference to the Treaty of Rome, Art. 35, the importance of standardization in freight transport to ensure the interoperability of networks and freight systems was emphasized by DG7. It was recommended to keep the future European research programme in mind when considering new standardization topics.

Mr. Jan Van Herp, CEN reminded that the European investments in infrastructure and freight transport and the sustainable development within the transport are closely related to standardization.

CEN has two instruments to offer the European market:

- a traditional Technical Committee (TC) producing primarily European Standards (EN), or
- CEN Workshop Agreements (CWA)

EN: Is elaborated in traditional CEN Technical Committees with controlled participation primarily appointed through CEN national standardization bodies amongst the national stakeholders (organizations, industries, consumers, research, labour organizations, authorities, etc.). The agreement on new work items for ENs guarantees the European stand still for national standardization while the process is conducted. The EN is in three languages: English, French and German.

CWA: Is elaborated primarily through consensus amongst self-supporting participants present in open workshops. This new publication will satisfy market demands for a more flexible and timelier alternative to the traditional EN, but it still possesses the authority, derived from the openness of participation and agreement inherent in the operations of CEN and its national members. It is this openness that distinguishes the CWA from documents developed by industrial consortia featuring limited participation (such documents are commonly known as de facto standards) .

The focus of this workshop is strategic recommendations for standardization in existing or new CEN Technical Committees as basis for the development of future ENs and/or separate future workshops aiming at CEN workshop agreements to improve infrastructure, as basis for efficient and cost-effective services and an environmentally friendly transport to the benefit of the Global and European society.

The CEN Technical Board will decide future progress based on the CEN workshop strategic recommendations.

CEN thanked The Commission for the support on the infrastructure of the workshop and the rapporteur and participants for all their individual resources provided to the success of the workshop.

Transport Quality and environmental Performance

- **Mr. Ron Willis from the British International Freight Association and Quality (*also respresenting CLECAT)***
- **Mr Poul Bruun, International Transport Denmark**

The proposal for CEN-standard "PrEN 13011 - Transportation Services. Mr. Ron Willis introduced Provision of cargo transport services - Code of Practice".

The scope is "*to provide performance indicators necessary to ensure efficient and effective handling of cargo through the transport chain*".

It is intended for use by transport suppliers and the purchasers of their services. The service provider is recommended regularly to carry out a self-assessment of his performance, with the objective of maintaining and improving his performance standards against defined criteria.

The code of practice recommends the service provider to have clearly defined management controls in place. And the customer should ensure his full understanding of the liabilities and limitations of the provider, especially with regard to insurance of the goods in transit.

It was informed that common law including subcontractors and their responsibilities prevailed in Britain and Ireland contrary to the Roman law for the European continent. This was a problem in relation to standardization.

- Responsibility and Control**:** The service provider should have clearly defined management controls in place. – The customer should ensure he has full understanding of the liabilities and limitations of the provider; especially with regard to insurance of the goods in transit.

- Contract review**:**
  It is the responsibility of the service provider to understand all aspects of the customer's requirements for the whole period of the contract of carriage.

  Information: The customer should ensure that the service provider is given sufficient correct information to allow him to fulfil his obligations.

  Formal management system: The customer should operate a formal and accurate management system to ensure the passing of correct information relative to the cargo and its voyage to the service provider.

  Access: The customer is to provide unhindered access. Where this is not available, the service provider must be made fully aware.

Storage: It is the responsibility of the service provider to ensure the safety of the cargo in transit and during any transhipment. He should also ensure that suitable securing facilities appropriate to the cargo, are provided.

Loss and/or damage: It is the responsibility of the service provider to monitor and report on any known loss or damage.

Documentation: The service provider is responsible to ensure he has sufficient and correct documentation to allow him to perform the movement. He should check all documents and take necessary steps to correct any discrepancies.

Sub Contractors: The service provider is fully responsible for the performance of his sub-contractors and should ensure that they have suitable management systems in place.

- Management of quality**:** It is recommended, but not necessary, that service providers meet the requirements of an appropriate and recognised standard, such as ISO 9002.

  It is recommended that service providers declares performance under PrEN 13011.

  It is recommended that purchasers of transport services purchase services declared to conform with PrEN 13011

- Performance:

  Packaging: It is the responsibility of the service provider to identify damage or deterioration of the packaging which may effect the quality of the cargo and to always act in the best interest of the cargo owner. Where practicable the goods should be repacked and re-stowed to minimise further loss of damage.

  It is the responsibility of the customer to present the cargo to the service provider sufficiently and correctly packed and marked.

  The customer must be aware that the acceptance of the cargo does not imply that the above requirements have been met.

  Preparation and dispatch: It is the responsibility of the service provider to ensure that full and accurate details of the cargo and its transit are passed on through the transport chain.

  The customer must ensure that the transport unit (i.e. trailer/container) he has pre-loaded is suitable and safe for the journey.

  Transport: The service provider is responsible to ensure that the means of

transport provided, by himself or his sub-contractors, are operated throughout the transaction within legal requirements, are suitable for the journey, and meet the highest standards of operating practice within the industry.

Proof of delivery: The service provider shall provide proof of delivery. Electronic links should be recognised as being acceptable.

Transport conditions. Where special environmental conditions are defined and agreed in the transaction, the service provider shall ensure there are effective management systems in place to effect control of such necessary information that requires to be recorded. Reference should be made, where appropriate to the relevant trade associations.

Quality planning: The service provider is responsible to prepare quality plans in response to his customers requests. These should include the identification-dedicated resources, relative to training, equipment, health and safety, and risk management.

Freight Transport and Future Needs for Harmonisation of standardization

***by* Mr. Poul Bruun, International Transport Denmark (ITD)**

representing the Danish international road haulage industry and efforts in CEN/TC 320: Transportation services, introduced the efficiency and environmental performance in freight transport and future needs for harmonisation and standardization.

It was emphasized that improved efficiency in logistics and freight transport will reduce environmental impacts and improve competitiveness for transport companies and for their customers - the European industry.

A significant indicator of that development is that modern management and logistic set-ups require data - or documentation - for efficiency and quality in the transport chain. To manage increasing competition and increasing costs, companies are forced to optimise the entire supply chain of products from raw material on to production, distribution and to the end consumer.

An improved efficiency in distribution means better logistics and better transport which very much depends on the development and use of more efficient and environmental friendly technology.

It depends on more effectiveness in fuel consumption, and it depends on better utilisation of the capacity of the specific transport equipment - the vehicles, the train wagons and the ships.

The necessity of performance data (efficiency and environmental performance) as

- Documentation /declaration for
  contracting
  meeting performance goals/standards
  environmental reporting (own and shippers)
  public control and regulation bodies
  etc.
- Data/key figures for
  management and decision systems (own and shippers)
  advertising and image/profile improving initiatives
  benchmarking
  etc

were emphasized.

Efficiency indicators - or key figures for evaluating effectiveness in the transport chain - are actually also very important environmental indicators. And such indicators or specific data are increasingly required by the market - by the shippers and their customers - to document that certain performance standards are met.

Data are required for environmental reporting. They are required to feed the advanced management and decisions systems that are used in transport companies and by shippers.

Data and key figures are required for advertising reasons, for input to benchmarking systems, etc.

Methods and models are developed for companies, for industry sectors and for public authorities to:

- generate data
- report data

in several countries, companies, organisations and authorities have developed - or are developing - methods and models for generating relevant data, and for reporting the data.

International Transport Denmark has made a public financed survey on that. A lot of resources - especially in the northern European countries - are placed in such developments.

The following problems were identified:

- Significant difference between organisations, between countries and between transport modes in:
  generated data
  generating methods and conditions
  data form
  how data are used

- No reliable data for sea, rail and terminal functions

- No reliable data for door-to-door transport
- Poor transparency on markets
- Competition on quality of data instead of quality of transport
- Inefficiency - costs and pollution

It was emphasized that survey - and the experiences gained - show that serious problems are to be faced. You cannot compare data from transport companies coming from different countries.

You cannot compare data from road transport with data from sea and rail transport.

There is no consensus - no common playing field - because of significant differences between organisations, between countries and between transport modes in how data are generated - methods and conditions are different - data are required and presented in different ways, and they are used under different conditions.

Another problem is, that there are no reliable data for the entire chain door-to-door. There are no reliable and common accepted data for transport on sea and rail and terminal functions.

This means that the transport market is far from transparent enough to make full benefits of the potentials for improvements of the transport systems and logistics.

Competition is often based on quality of <u>data</u> instead of quality of <u>transport</u>.

Mr. Poul Bruun introduced the work of CEN/TC320/WG2:

- A Draft Code of Practice on Cargo Transport Services
- A Pre-standard (prEN 13011) - declaration of performance conditions
- Pre-standard: declaration (reporting) of energy consumption and of exhaust emissions in road transport

and proposed the development of future European standards on

- Procurement methods for documentation of environmental performance in goods transport chains
- Food hygiene self-assessment control system - trade code for transport companies (according to Directive 93/43/EEC on hygiene and foodstuffs), and
- Transport of living animals

Under the Code of Practice (prEN 13011) presented by Mr. Willis, a general declaration of quality performance conditions is being distributed for public questionnaire in Europe these days. It can be ordered through the national standardization bodies.

The other work of the CEN/TC 320/WG2 is a pre-standard for the form and contents of formulas for reporting environmental performance in goods transport chains, and how and on what form data should be reported by transport companies to shippers.

In Denmark another work is being prepared as a trade code for transport companies, viz. on food transport. The reason is that according to the EU Directive 93/43/EEC on hygiene and foodstuffs also transport companies have to adopt a self-assessment control system. However, a common European basis for such self-assessment - or own control systems for companies - is to be preferred.

This is also the case when it comes to the safety advisor for transport of dangerous goods.

Eventually, another concern of international transporting companies in Denmark was considered, viz. whether standardization of the transport quality of living animals should be prioritised.

On the question to Mr. Willis whether the responsibilities of subcontractors were in legal sense or practical sense the answer was “both senses”. It is being tried to draw a picture of what is required; the evidence of the claim and the legal part. In common law there are regulations for sub contractors.

When transport is by ship the shipper takes the convention in full consideration.

A parallel to the prEN 13011 was drawn to the shipper’s responsibility for example if he has preloaded a container it is his responsibility that it is kept in good condition through the journey. The bill of lading is based on this legislation.

It was informed that three European federations of transport environment are considering common practice to regulate the process. A lot of initiatives are faced, as the claim of a minimum of good practice. For example the reporting on environment performance is a sort of minimum requirement.

It was further recommended to go beyond the legal requirements to give way to fiscal instruments in order to advance technical regulations.

Mr. Willis emphasised that the aim of a workshop should be to identify codes of practices suitable for standardization.

IRU is working with the DG 7 on how to generate the exhaust emission data for deliverables with minimum performance of requirement. The data are needed as proof.

It was predicted that the shippers are going to set the level of standards in future.

The European Sea Port Organization (ESPO) informed that they already had information on the internet in 15 European languages and Russian. The organization recommended the CEN code of practice to be published on the Internet. It would make the code known worldwide. Their own experience was that they received lots of comments on their own web-information.

In relation to the question of emission Mr. Walter Sicks, FAKRA Normenausschuss Kraftfahrzeuge, DIN informed that The German groups did not see a need for standardization on emission as it was covered by EU legislation as already informed by ISO/TC 22 at the last

CEN/TC 320 meeting. But how to compare data and what data is relevant to report to your shipper may be subject to standardization aiming to further best practice.

In relation to a trade code it was suggested to leave transport of dangerous goods out of the scope of a future standard.

Mr. Poul Bruun informed that exhaust emission and fuel consumption in the code are not related to dangerous goods. It was questioned what Directive is giving the level of emission performance?

The CEN/TC15 chairman informed that fuel consumption/emission from sea transport was being discussed between EC and the Rhine Danube Commission and should not be dealt with by CEN/TC 320.

It was informed that the IRU already has a code of practice for sustainable transport related to the CEN work . And it was further stressed that public regulation and pricing would be widely discussed in the near future.

A trade code for food hygiene self-assessment during transport of goods in relation to the Council Directive 93/43 EEC of 14th June 1993 on the hygiene of foodstuffs, was further recommended for a new CEN task.

The workshop with the exception of Mr. Sicks agreed on the first consensus:

1) 1999-12-13 Workshop consensus on new CEN work items

Recognizing a European need for harmonization, the workshop proposes the following new work items to be discussed in the CEN system:

- Procurement methods for documentation of environmental performance of transport systems in transport chains.
- Food hygiene self-assessment control system (according to Directive 93/43/EEC on hygiene and foodstuffs).
- Transport of living animals

Transport Logistics

***by* Mr. H.E. van Goor, Chairman of CEN/TC 273: Logistics**

Scope:

- Standardization of terms and definitions in Logistics (WG1)
- To define the functions for practitioners in Logistics (WG2)
- To define the qualifications for practitioners in education and training (WG3)
- To define performance requirements for tools and means in Logistics (WG4)

Introduction: The European Logistics Association (ELA) stated at its establishment in 1984 that if Logistics were to be a profession in its own right, it would be necessary to standardize the

European Logistics Terminology on a multilingual basis to ensure ease and correctness of communication from country to country. The scope is much wider than transport.

For the same reason the functions of practitioners in Logistics, including their education and training needs, should be defined.

Finally, logistics performances must be made measurable.

After having compiled the ELA Multilingual Dictionary: "Terminology in Logistics" it set out on an extensive EU project in order to survey the functioning of practitioners in Europe under the finance of the European FORCE programme.

In 1991 the CEN/TC 273 was created in order to come to a standardization of the issues above.

Definition of logistics: On the basis of Slater (USA) ELA started its projects with the definition.:

***Logistics**: The planning, execution and control*

- of the movements and placement of people and/or goods, and
- the supporting activities related to such movement and placement within a system organized to achieve specific objectives

today called "Supply Chain Management" in which transport (internal and multimodal) plays a vital role because "without transport nothing moves".

WG1: Logistics- Structure, basic terms and definitions in Logistics (prEN 12777)

After long and intensive discussions with many stakeholders in the EU countries this WG presented their deliverable to CEN who started the enquiry on 1997-09-06.

The received comments (mainly from stakeholders who refrained from participation during the work) were not serious but needed some attention in re-editing.

Due to some grave personal circumstances and lack of financial support this work has been delayed. (Cf. the plans for the future, below).

WG2: Some Occupational Profiles for Practitioners in Logistics (CR 13156)

Based on the outcome of the FORCE-project the above-mentioned CEN Report was drawn up. The profiles have been defined "from bottom up" starting with the clustering of more than 600 task definitions. Some 32 Logistics functions were described. (In the meantime many of these functions have been integrated into "operational" functions).

WG3: To define the qualifications for logistics practitioners in education and training

The enormous diversity of European education structures (and laws) made it an impossible job to arrive at a consensus over standardization of vocational education and training. However, the information received from the FORCE survey permitted WG3 to come to a consistent set of "end terms" for all of 23 profiles defined by WG2.

Since no consensus could be reached, WG3 decided to hand back these “end terms” to ELA, who created the European Certification Board in Logistics (ECBL) for further implementation in Europe.

WG4: Logistics Performance Measures, Requirements and Measuring Methods

The draft CEN Report has been presented for formal acceptance early January. (Copies are available on request to national CEN member bodies).

Future Cooperation with CEN/TC 320

As suggested by AFNOR it could be a very positive idea to re-edit the prEN 12777 together with CEN/TC 320.

For this the following reasons can be given:

- **“***Transport*” is a very strategic issue within Logistics or Supply Chain Management. It therefore looks logical to finish a norm on SCM together with its largest stakeholder
- *During* the long process of developing the Terminology in Logistics the real world in logistics has changed enormously. It is therefore time to reconsider the various definitions!
- By joining forces a new “standstill” on a revision of the terminology in logistics can be achieved in order to avoid that the “wheel to be invented” again at different places within CEN. (Other TCs can join this project on request).

This proposal has been discussed within CEN/TC 273 and in the AGM of ELA and Drs. Hans E. van Goor, has mandate to discuss this issue during this workshop with CEN/TC 320. However, the lack of economical resources might influence the schedule of the revision.

The chairman of CEN/TC 320: Transportation services, Mr. Soren Ostergaard, presented a comparison of the scopes of CEN/TC 273: Logistics, and CEN/TC 320: Transportation services, emphasizing the overlapping of responsibilities. He informed that the Business Plan of CEN/TC 320 has been approved by the CEN system. The Business Plan of CEN/TC 273: Logistics, was at the time of the workshop still open for discussion and comments before approval.

CEN/TC 273 Logistics *Scope:* Standardization of terms and definitions in logistics To define the functions for practitioners in logistics To define the education and training topics for the functions for practitioners in logistics. To define performance requirements for tools and means in logistics	**CEN/TC 320: Transportation services** *Scope:* Standardization of quality and performance criteria for services undertaken in the transportation chain
WG4: Logistics Performance Measures *Scope:* To define a set of logistics performance measures, requirements and methods for performance measurements, relating to effectiveness, efficiency and associated factors in the areas of logistics management, systems and equipment.	**WG2: Performance Conditions in the Transportation Chains** *Scope:* To describe performance conditions in the total transportation chains from producer to final consumer in order to ensure their quality and to reduce their costs. To identify parameters and propose standard ways of measuring

The chairman of CEN/TC 320 invited the CEN/TC 273 chairman to a mutual reconsideration of scopes in order to avoid overlapping standardization. The CEN/TC 119 and TC 15 also had considerations to be taken into account e.g. the definitions in an existing paper on multimodal transport.

Furthermore, he suggested to compare existing logistics systems in order to try to ensure that they are sustainable.

It will be possible within the CEN rules to make horizontal standards covering e.g. terms and definitions within the whole multimodal transport chain. (Example: Type A-standards).

3) 1999-12-13 Workshop consensus on new CEN work items:

Recognizing the overlapping scopes of the CEN/TCs within the field of logistics and transportation, the workshop recommends the CEN Management Centre to start up an integration process, involving all concerned TCs.

It was suggested from Freight Forum that all means of transportation included city logistics should be involved in an active discussion of future standardization. The following workshop consensus was made:

4) 1999-12-13 Workshop consensus on new CEN work items:

The workshop proposes to organize a forum for investigation of the future standardization requirements for freight transport service and logistics systems.

Freight Transport in Urban Areas

- **Mr. René de Bondt, EVO**

Urban logistics: Mr. René de Bondt found Logistics confusing if checking with the Logistic terminology and transport dictionaries; transport in urban logistics was in his opinion an almost forbidden term in Commission discussions as it was related to subsidiaries. However, with the increasing use of road transport - it is expected to grow with 50 % the next years - besides economic growth, and as every day has its own traffic jam due to density of transport and bottlenecks also at regional districts, the transport sector is discussing “transport in urban logistics” internally. Mr. René de Bond questioned if standardization could contribute with a tool to the solution of the logistic problems?

In relation to subsidiarity it was emphasized that the problems of transport in urban logistics at local level can differ a lot. There may exist regional rules and regulations for instance in the Netherlands and Denmark covering the entrance of vehicles and trucks to the region and cities. In some areas trucks are banned from cities after 8 a.m. This is contradictory to a wish from retailers presuming that the deliveries are executed in accordance with their needs in spite of the infrastructure. Therefore, there are made a lot of efforts to meet the interests of all involved parties. New ways and new developments are considered e.g. standardization as a tool with requirements from all parts of the transport chain as essential elements, e.g. optimal ways of loading and unloading. The competition in transport calls for cost effectivity being an important element of city logistics.

It was recommended to optimise e.g. loading and unloading, dimensional coordination within normal transports, hygiene quality and temperature of food transport. Besides, a segregation of traffic in e.g. day or night services may effective transport. In this context results from the thematic networks of the 5th Framework Research Programme should furthermore be considered.

2) 1999-12-13 Workshop consensus on new CEN work items

Recognizing a European need for harmonization within freight transport in urban areas, the workshop recommends to consolidate all information in a city logistic forum, from all stakeholders and then consider the position, including evaluation of the needs for small loading units in the intermodal chain.

Information systems

- **Mr. Dominique Van Kemmel, EDIFACT Transport**

The present and future plans for EDIFACT Transport and the way forward to harmonized electronic trading for international transport was presented. One of the EDIFACT groups is dealing with transportation: EDIFACT Transport Group EEG2. The members of this group are

- national delegations (14)
- International transport organizations
  IRU (road)
  ICS (maritime ship owners)
  UIC (rail)
  FIATA (freight forwarders)
  SMDG (shipping lines and container terminals)
  IATA (air freight)
- Other PEG's (pan European user groups)
  EAN (retail/distribution etc.)

The mission/tasks are:

- Standardization:
  Development of EDIFACT messages for transport/logistics
  with an international, inter sectorial, intermodal perspective
- Maintenance:
  EDIFACT messages and directories (DMR's)
  Code lists
- Recommendations for implementation guidelines and user manuals
  (WETIGG/ITIGG)
- Electronic commerce:
  Internet, XML/EDI, Lite EDI, EFI

There are liaison with other regions and other sectors as MIST (Multi Industry Scenario For Transport) being vital for secretarial, technical and logistics support.

And participation in projects in Europe (CEN MIG's, AFTEI (DG7) on air freight transport and European intermodality and internationally in TRANSCORE (EAN/UCC).

The EDIFACT transport worldwide covers

- EDIFACT Working group under CEFACT/United Nations (two yearly meetings: April/Sept.)
- Transport Group D4
- Sub-Groups ITIGG (International transport Implementation Guidelines Group providing guidelines and user manuals of EDIFACT transport messages)

- Close cooperation with other groups within trade, customs, finance, statistics, insurance

The current and future plans of EDIFACT Transport are:

- Development of new messages
  BERMAN; TRFREP, BMISRM, IFTMCA …
  Traffic/travel messages (in cooperation with CEN/TC 278)
  EDI with mobiles (on-board computers)

- Investigate generic transport messages (new syntax – MDR)

- DMR's (Date Maintenance Request) processing

- Harmonization implementation guidelines (ITIGG) in liaison with IHG for all transport modes and equipments (containers)

- Automatic identification of transport units
  Bar Coding: CEN/TC 225
  'Smart' electronic label

New developments:

- Keep abreast of emerging technologies: Electronic Commerce, Internet

- Solutions for SMEs (Light EDI, EFI (electronic forms), UN Aligned documents and SimpEDI

- XML/EDI (DTDs equivalent to EDIFACT message. Safeguard the asset of EDIFACT on semantic contents of business data.)

- **Mr. J.C. Rennesson**, AFT-IFTIM-TNT (convenor of CEN/TC278/WG2)

informed that the group some years ago had prepared high level studies for standardization. After clarification of new systems for architecture requirements two new projects had been launched on intermodal and interoperable freight transport information systems in Europe. The design of the system for architecture was in accordance with the US and Japanese systems. The compliance with European regulations was one of the user needs.

In future a huge work would be done to consolidate the standardization requirements. The first step would be to agree on a definition of intermodal transport in order to avoid confusion later on.

It was recommended to proceed the work by carrying out a simultaneous top/down – Bottom/up approach. To design a system architecture based on identified users requirements. And to consolidate all available inputs from stakeholders.

The state of art is the IT architectures in US/Japan/Europe *(KAREN/COMETA/HIFA)*. The European projects, as *INFOLOG/CESAR/MULTITRACK/TRACAR should be considered.* Furthermore, EDI *(EDIFACT/XML/MIST/MOBILE EDI)* and ISO and CEN proposals on AEI and AVI.

Examples of topics to be dealt with:

Management of freight and fleet operations. Management of logistics and freight, commercial fleet and vehicle-driver-cargo equipment, freight business transaction, intermodal transport synchronisation, fleet resources, incidents, vehicle and equipment acquisition, driver employment vehicle and equipment maintenance activities; control freight and cargo operations; evaluate freight operation performance, transport conditions and fleet operations performance; control and monitor fleet operations; choose a fleet supplier, prepare freight operations, negotiate principal requests, administrate freight transactions, handle hazardous goods transport declaration, customers declaration and official transport documents. Identify possible transport optimisations, book storage places and elaborate and store an operational trip and load plan.

The intermodal transport can be managed from the various transport modes. The OH presentation included topics from the above projects.

It was further recommended in relation to standardization of information system architecture (CEN/TC 278 and ISO/TC 204).to ensure the compliance with European law.

During the following discussion it was mentioned in relation to the CESAR system related to internet communication, messages included, that a basic problem was that most people think that if you give a structurized message, it would not be possible to unload the message. During the last 20 years the industries have built systems, but the problem is the system of the supplier.

In relation to internet it is important to realize that not all solutions are to be found there. There is a common agreement to apply EDIFACT as a basis. The decision has been taken in joint venture. Concerning the architecture and rationalization of communication the user requirements on functional level, the data flow, the data stores, kind of tool and alternative solutions should be

given high priority. A control of the picture, the interfaces, requirements and interoperability should be considered with the end aim to fulfil the market needs.

The movement of freight has to be controlled. The shipper is responsible for the whole contract of carrying and in relation to damages it is important to have a standardized tool to be informed of the shipper's responsibility. Concerning damages there is no single system to be applied for identification.

The "intermodal transport" was questioned and identified as a "combined transport". The principal will give an order to a road operator which will again give another order to the railway operator, and this again to a sub-contractor. The control of the freight flow should be managed. Big differences between multimodality have been observed. Several transport means can be used as a substitution, e.g. a swap body can be carried by different means of transport..

The different legal systems was questioned.

The difference in terminology should be eliminated, for example if the carrier takes the responsibility for the entire intermodal transport the French expression is "donneur d'ordre", but there is no equivalent terminology in English, - "the principal" does not imply the person who gave the order.

The UNCTAD convention says in relation to combined transport operation to deliver at terminal. Each operator will have his own different way of dealing with information, e.g. on internet. The quality of such information should be looked upon.

- **Mr. Anders Hagen for Knut Evensen**, Q-free ASA, convenor of CEN/TC 278/WG12,

informed on the standardization evolution within the Intermodal Intelligent Transport Systems.

Standardization in this field has taken place since
- 1991 in CEN/TC 278: Road Transport and Traffic Telematics
- 1993 in ISO/TC 204, after negotiations with CEN.
  AVI is a joint ISO/CEN work under the lead of CEN
- In 1997: four intermodal work items are approved in ISO and CEN
- In 1999: Drafts of Intermodal work items are progressed to Committee Draft

CEN/TC 278 RTTT Working Groups:
1: Electronic fee collection
2: Freight and fleet management
3: Public transport
4: Traffic and traveller information
5: Traffic control
6: Parking management
7: Geographic road database
8: Road date/elaboration, storage, distribution

9: Dedicated short range communication
10: Man-machine interfaces
11. Subsystem/Intersystem interfaces
12. Automatic vehicle and equipment ID
13. Architecture and terminology
14. After-theft systems for vehicle recovery

ISO/TC 204 Working Groups:
1: Architecture
2: Quality and reliability
3: TICS database technology
4: AVI/AEI (CEN278/WG12 lead *)
5: Automatic fee and toll collection (CEN/TC278/WG1 lead*)
6: General fleet management
7: Commercial fleet management
8: Public transport/Emergency services
9: Integrated transport management and Co.
10: Traveller information systems
11: Route guidance and navigation systems
12: Parking management/off-road commercial
13: Man-machine interface (off-vehicle)
14: Vehicle control systems
15: DSRC for TICS applications (CEN/TC278/WG9 lead*)
16: Wide area communication/protocols/interfaces
*) "lead" means that CEN-standards goes for parallel vote in ISO/TC204.

AVI/AED is a technology or a generic tool for ITS areas that need controlled identification as part of the application. It is also a stand-alone system specification for uses where no other standard is available or needed.

AVI/AEI Standards overview

	Part 1 Architectures and terminology	Part 2 Numbering and data structures	Part 3 System specification	Part 4 Interfaces
Road	ISO 14814	ISO 14816	ISO 14815	Merged to 17264
Multimodal	ISO 17261	ISO 17262	ISO 17263	ISO 17264
Other single modes	ISO 10374	CLC 9x	prEN 13044	ETSI 300 xxx

the above mentioned standards can be purchased from the national standards associations.

A comparison between Intermodal Transport Chain and Tag Data Carrier was shown as follows:

Intermodal Transport Chain	Alternative: Tag Data Carrier
1: Letters and parcels are marked by identifying barcodes, and registered	1. Letters and parcels are marked by identifying barcodes, and registered
2: Freight documents for registered goods are sent on EDI format	2: Freight documents for registered goods are stored in tag
3: The small goods and mail are put into bar-coded boxes, and then registered	3: The small goods and mail are put into larger boxes, and then registered in tag.
4: Larger goods are put on bar-coded or RFID tagged pallets and registered	4. Larger goods are put on pallets and registered in next level tag
5: The various registered freight units are put into freight containers that are RFID tagged. The container ID and contents are cross-registered	5: The various registered freight units are put into tagged freight containers. The freight box tag contains all IDs.
6: Freight containers are shipped by RFID equipped road or rail vehicles, and the ID and contents are registered	6: Freight containers are shipped by RFID equipped surface vehicles, and the ID and hierarchical contents are registered in the vehicle tag

It was informed that the intermodal tagging drafts by CEN/TC278/WG12 has been offered for study. Furthermore, the WG12 has offered the service to develop any intermodal or multimodal AVI/AEI standardized requirements.

8) 1999-12-14 Workshop consensus on new CEN work items

The workshop notes the ongoing activity in the European research project on horizontal transfer and recommends to consider standardization in this field based on the results of this research project (IN.HO.TRA).

- **Finn Zoëga (The Danish Technological Institute)** *replacing Mr. Peder Jensen, DTU*

Working on “track and tracing” some years ago within MD Foods, Denmark, Mr. Zoëga had experienced the importance of IT and information systems. In order to get fresh fruit and vegetables – items of special interest to producers and consumers – the transport chain is up to 33 % dependant on logistics.

The following routines in relation to trade are considered

Tenders, offers and agreements
Data recordings, incl. onboard measuring for public pricing
Booking
Proof on delivery
Track and tracing
Quality in transportation
Environmental information
Emission data
Benchmarking data
Service
etc., etc.

all are important parts of optimisation of quality and related standardization.

The supply chain is dependant on transportation quality comprising i.e. EDIFACT (trading documents), RTTT (road transport and traffic telematics), and public regulations.

Mr. Eugène Dürr gave out of the agenda a comparison of EU Transport projects (DG 13):

1995/96:

- IFMS
- Metaphora
- Combicom

under FREDI taskforce as input to CEN/TC278/WG2: Freight and Fleet Mgt Systems, in shape of CEN/ENVs (pre-standards). The included party naming, trip/tour planning, functions, terminology and high level 00 architecture.

1997/98:

- Interport
- Intact
- Infolog

under HIFA taskforces and concerning freight architectural activities to the Code Website of DG13 (www.trentel.org/hifa). He informed that all documents were in PDF. The following was among other items dealt with: intermodal, transport scenario, 00-based models, data structures, and virtual organisations.

1999/2000:

Progress in “99/Y2K”: Karen functions (SITS: DG7) on maritime additions on board architectures as XML document definitions for exchange. An example follows:

Transport preparation	Transport execution	Transport finalizing
route planning modality choice quotation fleet planning party selection	progress monitoring data sharing tracking &	payment contract verification quality assurance

And finally he presented the advance in Layering and gave a uniform view of the Virtual Layer from Virtual Terminals/data bases and the user view to databases for Forwarders/carriers/barge centre databases.

A representative from DG XIV informed in relation to systems architecture that a Task force had been established to unify the shape of the messages. During this work the definition of the word “shipper” had been dealt with. This word could not be identified in the same way in all countries. They had to fulfil a collection of roles in the organizations. In 1997/1998 a lot of discussion with the Americans took place resulting in the aim of harmonized efforts. The CEN draft on intermodality is part of the projects.

In relation to research projects the consolidation of previous results was made.

In 1999 added activities were taken to unify and harmonize. There are still some work to be done.

Still the main point of each project presented is unclear. Still some work remains resulting in a kind of unified architecture.

The DG 7 and DG 14 is collaborating on the different projects e.g. in relation to terminology which may be part of the 5th Framework Programme. Furthermore the collaboration between other DG projects has been strongly recommended by DG 3.

A lot of developments are going on and would stepwise under the 5th Framework Programme focus on actions to coordinate efforts between developments in Europe.

The lack of equivalence on ITS between US and EU where US is open should be eliminated. Therefore it is important to build on the same and ensure standards to be implemented properly.

Mr. Patrizio Grillo, DG 7, had noted a borderline between standardization research on ITS and research on transport the elimination of which would facilitate the implementation of the results of research. He informed that the question of the system architecture came up seven years ago in parallel to what was happening in the US. In relation to interoperability he called for the opinion of ERTICO and informed that since 1985 “the new approach” had been applied for harmonised

standards in EU. ERTICO is preparing such standards. If the ERTICO does not succeed in preparing harmonised European standards EU will need a directive including the necessary technical requirements.

Recognizing that there was no need for a new CEN Technical Committee, the workshop concluded:

Conclusion 1 (1999-12-13)

Recognizing a number of practical and legal problems identified through the workshop, it is recommended that the interested parties take part in and ensure the coherent ongoing standardization of freight transport IT.

Furthermore, the workshop recommended the establishment of a new workshop with the aim to discuss improving and the full integration and visibility of freight flow to ensure the mobility and effective management of freight:

Conclusion 2 (1999-12-13)

Recognizing a number of practical and legal problems identified through the workshop, it is recommended that a new workshop is convened to discuss improving and the full integration, the full visibility of freight flow such that the freight can be managed more effectively.

Transport Means and Handling Equipment

Dr. Christopher Seidelmann, Bureau International des Containers, and chairman of CEN/TC 119 – Swap bodies for combined goods transport informed that practically all transports starts and ends at road transport. Furthermore that 50 % of the total cost is the drivers' salary. Economics therefore show that the more goods/cargo there is behind a driver, the more economical the transport will be.

Swap bodies are constructed with full respect for legal framework, but they will not exercise pressure or politics. The European legal framework will safeguard investment in transport means.

The total investment worldwide in transport is 30 billion Euros. Therefore the development of transport means e.g. by lowering wheels and chaissis, more transport volume can be earned.

The legal framework for swap bodies is 7.82 m and 7.45 m.

He summarized and quoted from the three parts of the Final Report on Current State of Standardizations and future Standardization Needs for Intermodal Loading Units in Europe (UTI-

Norm) elaborated under the 4th EC Framework Research Programme by a UTI Project team including himself:

Experience has shown that the European situation in the field of loading units does not cover all needs of the trade and forms a hurdle to the further development of intermodal transport.

This is due mainly to two facts:

The current ISO containers, as standardised in ISO 668 and 1496, do not fit into the needs of European logistics. They do not offer as much volume as comparable road vehicles and are, in consequence, not competitive against road transport. Furthermore, and even more severe, the standard pallet accommodation patterns of the ISO containers are very bad compared to those of similar size class road and rail vehicles. Thus, the ISO container is rarely used in inter European transport.

The current swap bodies as standardised by CEN are optimised for road and rail transport only, and do not offer economic solutions of inland waterway and short sea transport. If these two modes shall be included into a truly intermodal European concept, loading units have to be designed that are stackable and that are fitted with top corner fittings for lifting by spreader. Such units can offer greatly improved transport economics for these two additional modes and contribute to a truly intermodal system in Europe with a positive effect on the overall political aim of sustainable mobility.

So, this study looks after the operational conditions and design requirements of a future European loading unit that overcomes the current shortcomings by offering as much interior volume for cargo accommodation as European road vehicles, and offering similar polarisation patterns, thus being fully competitive with European road transport as far as the design of the cargo carrying device is concerned, and offering improved transport economics for inland waterway and short sea transportation while keeping full compliance with road and rail operation needs as current swap bodies.

In consequence, the study has elaborated recommendations to standardise a future European loading unit with the main dimensions of current standard swap bodies, and to include stack ability, top corner fittings and certain additional strength requirements to the design.

The future European loading unit will fit into the current European transport modes as follows:

Road transport

The proposed European loading unit is recommended in two sizes, one size designed for European road trains as a twin unit, one to be carried on the rigid truck and the other on the trailer, and the other size designed for transport by European articulated road vehicle carried on the semi-trailer.

The unit is proposed with a height making full use of current design in road vehicles and the European legislation allowing an overall road vehicle height of 4000 mm.

The proposal takes care of the possibility to achieve a lightweight construction to avoid tare penalties compared to conventional road vehicles. Furthermore, the proposal aims at a loading unit that can be built rather cheap.

Rail transport

The proposed unit takes care of the current loading length of railcars, making best use of the loading patterns offered with the majority of the current European railcar fleet.

The loading unit is proposed with an outside height that can be accommodated in most important European rail corridors when carried on standard platform height railcars, and in many other corridors, that offer reduced gauge on railcars, with special design for lower platform height, such railcars being state of the art.

Inland waterway transport

The European loading unit is designed to be stacked at least four high in inland waterway transport making full use of the loading patterns of the most important European inland waterway, the Rhine river and its coastal canal connections. By merits of stacking, the loading unit offers greatly improved transport economics in inland waterway.

The loading unit includes some difficulties in transport within the Central European canal network, because its width impedes full loading of inland waterway barges that are designed to pass through the locks in this system. Further considerations are needed in this area.

Short Sea Transport

Once a stackable loading unit is offered, modern Roll on/Roll off ships can switch from one layer transfer and transport to double stack transfer and transport on board the ship. This development will considerably improve the economics of loading and discharge, and the volume accommodation patterns on board ship.

Roll on/Roll off ships are so flexible in their loading unit accommodation that the proposed sizes of the future loading unit do not create any difficulty.

Cellular ships operated in short sea transport create more difficulties to adapt to the sizes of the future loading unit, because these ships are mainly built to accommodate ISO containers with other width and length. While the width problem can be overcome rather easily (and today short sea cellular ships are already operated that can carry either ISO containers or pallet wide containers), the adaptation of the cell guides to the different length of the future unit might create difficulties - not in technical design as adjustable cell guides are state of the art - but daily in operation because these ships might have to carry a changing mix of ISO containers and European loading units. No experience has been gained yet about the feasibility of cell adjustment in the short period when the ship stays in a port terminal.

Another problem will come up if stacks of more than two layers are incurred in short sea operation. Normally, such ships are built for stacks of three layers on deck, and of six layers under deck. The

design of a large European loading unit with full six high stack ability in sea transport will lead to a difficult construction, leading to a rather heavy and costly unit that might no longer be competitive in road and rail mode. Further considerations are needed in this field; one first experience has been gained about concrete conditions of operation of such units.

In general, European short sea shipping will benefit from a move to standardised units that might replace the great variety of different sizes and shapes that are today used in this trade. Standardised units will contribute to more efficiency and more safety in this operation.

Recommendations for the design of a future European loading unit

Under current road vehicle dimensions related legislation, the study expert team recommends a class A European loading unit with 13 600 mm length and a class C European loading unit with 7450 mm length and a width of 2550 mm.

An outside height of 2900 mm for the European loading unit is recommended. Increasing demand for special European loading units offering an inside loading height of 3000 mm can be foreseen and may have to be accommodated in standardisation in future.

The expert team recommends to foresee the following gross weights (masses) for the European loading units: The 13600 mm long unit shall be designed to a maximum gross weight of 32,5 t, the 7450 mm long unit shall be designed to a gross weight (mass) of 16 t, and specific heavy duty loading units of 7450 mm length can be designed with a gross weight (mass) up to 32,5 t.

The European loading unit shall be equipped with top corner fittings. Such fittings shall be designed compatible to ISO 1161. The fittings on top of a class A unit shall be a 8 ft. width and 40 ft. length distance and preferably symmetrically located inside the frame, the fittings on a class C unit shall be at 8 ft. width and 7450 mm length distance and integrated into the corner posts. The European loading unit shall have bottom corner fittings at 8 ft. width and 40 ft. length (class A) and 20 ft. length (class C). The bottom fittings must not be designed to take over lifting forces. The underside of the unit must be equipped with reinforced load transfer zones at the same dimensional location as the top fittings. Once the European loading unit is equipped with top corner fittings for lifting, grappler arm recess in addition to that is not needed.

The small European loading unit Class C shall foresee forklift pockets as an optional feature, and class A shall not be provided with fork lift pockets.

The European loading unit shall be equipped with sidewalls offering the same strength capability as those of ISO series 1 containers. Further enquiries must ascertain whether possibly a lower value might render sufficient strength.

The European loading unit shall be equipped with end walls and end doors offering the same strength capability as those of ISO series 1 containers.

The European loading unit must be designed as a stackable unit with top corner fittings. The minimum stacking capability must be at 4 layers without additional vertical acceleration. This

includes a capability of 2 layers with additional vertical acceleration of 0,8 g. Full ISO series 1 container stacking capability will be advantageous and can be easily realised with 7450 mm loading units. For 13600 mm long loading units, an acceptable compromise between stacking capability and acceptable tare has to be found.

A European loading unit must be designed to withstand limited racking forces if moved only on Ro-Ro ships. If such units will be carried in stack on deck of short sea ships, a racking capability up to that of ISO series 1 containers is needed.

The European loading unit shall have the same floor strength as that of ISO containers, specified in ISO 1496.

The European loading unit shall have the same roof strength as that of ISO containers, specified in ISO 1496.

It is recommended to mark the European loading unit according to the provisions of prEN 13044 being issued for 2nd formal vote these days of reporting.

It has to be noted that the European loading unit has to be approved under the CSC Convention and be equipped with a CSC approval plate.

Dr. Seidelmann concluded that the European transport policy has

- to keep the legal framework on dimensions of road vehicles stable

as road and rail have different investment cycles, European combined transport operators have a paramount interest in stability of current regulations of dimensions of road vehicles.

UIRR operators and the International Associations of rail and road operators such as UIC and IRU do not favour a 15 m semi-trailer length. Therefore it is recommendable

- to promote the evolution of road transport rolling stock towards a combination of pallet wide stackable freight container + platform chassis configuration

The current habit to operate rigid built semi-trailers in European long distance transport has to be replaced by a policy investing in 2 pallet wide stackable freight containers and platform semi-trailers. Such containers are a necessary pre-requisite for competitive intermodality in Europe. By this operation, rail and waterborne transport can become more competitive against road transport in Europe.

It was recommended to invest in 2 pallet wide stackable freight containers and platform semi-trailers in European long distance transport.

The European container can be operated

- on platform railcars of current technologies on practically all rail networks in Europe (except some lines in Great Britain)

- in inland waterway on the Rhine, the Danube and some coastal waterways in Netherlands and Belgium in stacks of 4 layers, on most other waterways such as the Central European canal network in 2 layers,

- on European sea routes with Ro/Ro ships in double stack with considerably increased space utilisation and economic benefit,

- on European sea routes in cellular ships with specifically adapted cell structure in stack,

- on current road transport platform chassis.

Compared to this intermodal quality of containers, current semi-trailers show poor performance in many road/rail and Ro/Ro operations and even poorer performance on inland waterway barges and cellular ships. Swap bodies as used today, i. e. non stackable units, also show poor performance in inland waterway transport and European sea transport.

To foster a development towards increased use of stackable European loading units in place of semi-trailers in European trade, the final report of the experts from the UTI-Norm Project Team invite the European Commission

- to pursue the introduction of a 44 t maximum weight allowance for road vehicles operating in intermodal transport to compensate for the extra tare weight included in this configuration

- to promote the standardisation of a European loading unit that fits on a 13,6 m European articulated road vehicle and offers a competitive alternative to the rigid built semi-trailer

- to consider further incentive schemes, such as tax incentives, exemptions from driving bans, to promote this development on national or European basis

- to organise further consultation between standardisation experts and operators of inland waterway and short sea cellular ships, regarding the exact width choice of the future unit in the range between 2,52 and 2,55 m. However, as currently inland waterway transport ships are only loaded 60 % to 70 %, they can take a load mix with some 25-30 % share of wider European loading units without significant additional costs. PACT should support pilot projects in the form of new services using these units, provided the other selection criteria are fulfilled.

Once a CEN standard for loading units fitting the above requirements has been decided, the Commission was invited to propose a Council resolution to endorse it and stress that governments should only procure and support such units.

The European loading units shall have a length of 13600 mm (class A) and of 7450 mm (class C), a width of 2550 mm, a height of 2900 mm and a stack ability that should try to ascertain transport in at least 4 high stacks under sea transport conditions.

Therefore, concluded Dr. Seidelmann, 44 t maximum gross weight in road transport should be allowed in intermodal transport operations, why the EU Commission was invited to enlarge the EU legislation accordingly.

As any combination of container + platform chassis will result in more tare weight than a rigid built semi-trailer of similar capacity, intermodal transport needs to be compensated for this additional tare weight.

Concerns that have been offered recently can be answered by detailed explanations:

- that such a regime is already in place for 40 ft. containers
- that such a regime is needed for improved competitiveness of intermodal transport in Europe
- that this regime has been applied successfully in some European countries, and that these countries have had good experience with the necessary surveillance regime avoiding too much bureaucracy but preventing fraudulent application of these rules.

As the 13,6 m long semi-trailer is the most important cargo carrying unit in European trade, a stackable loading unit of this size is urgently needed to include European railways with limited gauge, inland waterway transport and short sea transport into intermodal transport. Currently the CEN TC 119 - Swap bodies for combined transport, has successfully prepared the standard on a 7,45 m stackable loading unit.

Mr. Wilschut informed in relation to swap bodies, that most European countries use the 7,82 m long swap body why a future stackable swap body should be accordingly. Furthermore, in relation to stack ability that the European industry did not give it a warm accept being of no need in Europe in the near future.

Mr. Carsten Riis-Fredriksen, DS, informed that the existing three parallel measurements for the length of swap bodies are valid (Class C of EN 284 has three equal lengths measurements: 7,15 m, 7,45 m and 7,82 m.). Only when the dialog is on stackable swap bodies the length agreed so far is 7,45 m.

As the shipped goods are being transported in both ends by rail or road the importance of interface between transport means was emphasized by Mr. Soren Lund, DFDS.

Standardisation in CEN TC 119 is based on voluntary European co-operation and the experts are not paid for their contributions. As the European manufacturers of swap bodies have only limited

interests in such a development, the future of standardisation work in that field, when based on voluntary work only, will move forward in slow speed. The standardisation work can be greatly accelerated if CEN sets up, in close conjunction with the European Commission, a selected experts team, paid with a normal commercial salary for their effort, with the clear task to draw up the necessary draft standard documents in a given short time period.

The instrument of speeding up European standardisation by promotion through the European Commission has been successfully applied in many cases, and should be seriously considered in case of a stackable European loading unit of 13,6 m length as well.

Dr. Seidelmann further recommended from the final report the European research to look after the development of European inland waterway transport barges that can accommodate 4 rows of European loading units side by side.

Barges that can accommodate 4 rows of European loading units side by side and keep the maximum width (currently 11,45 m) for operation in Central European inland waterways are currently technically not possible. As most Central European inland waterways are equipped with locks of nominal 12 m width allowing only the passage of barges up to 11,45 m width, a barge design that offers an inside clearance of some 10,5 m to accommodate 4 rows of European loading units with 2,55 m width each of them side by side plus the necessary tolerance can greatly improve the economics of inland waterway transport in Europe. Various concepts have been suggested to overcome this problem, and European research is invited to take over this question in research, prototype development and pilot operation.

Consequently, European research was recommended to look after the development of European railcars with platform height of 800 - 900 mm above rail and sufficient cargo carrying capability.

The development of European railcars with platform height of 800 - 900 mm above rail and sufficient cargo carrying capability will lead to the development of increased axle loads with small diameter wheels. Such small wheels can be used today, but only with reduced axle loads that might infringe the payload of the railcar.

While a 2900 mm high European loading unit can be carried on most parts of the European rail network without too serious gauge problems, European intermodal transport is meanwhile faced with the need to operate units with an inside height of 3000 mm resulting in an outside height of 3150 mm. Such demands come currently from the European automobile industry, which is a major client in intermodal transport. A loading unit with a height of 3150 mm would need a platform railcar with low diameter wheels, which will lead to limited load carrying capability. Research can contribute to find technical solutions that offer a low platform railcar with sufficient payload for European intermodal transport.

Consequently, the European research in technical, commercial and economic patterns of European short sea transport with a view to optimise transport conditions for future European loading units shall be intensified.

This research must aim at a technical development to improve inter-operability and cover items such as:

Flexible cellular systems,
Ship design in general,
Ship propulsion systems,
Sea terminal optimisation, especially in ro/ro operation of stackable loading units,
Specific design and operation concepts for tri-modal terminals connecting road, rail and inland waterway transport,
Information flow in intermodal road-rail-sea transport systems such as already initiated in the European research projects APRICOT and MARTRANS.

Dr. Seidelmann recommended that the inclusion of small European short sea carriers into harmonised EDI and Internet systems for communication between ocean carrier, terminal operator and forwarder shall be promoted by pilot projects.

While communication using harmonised EDI systems, partly via Internet and partly via current added value services, is state of the art for larger ocean carriers, many of the smaller shipping companies that operate in European short sea traffic have not realised such systems. On the other hand, a harmonised information system will greatly reduce commercial transaction costs, speed up communication between the partners and assist to achieve high quality services. A close look must be taken on the current patterns of such small ocean carriers to determine the reasons why they did not realise such systems up to now and how to promote the use of them in the future.

Dr. Seidelmann concluded with some general considerations on current standardization within intermodal transportation that Intermodal transport is only possible when the various technical features of vehicles, cargo compartments, handling devices and ancillary equipment fit into each other.

This harmonisation can be achieved by individual agreement between some parties that decide to establish such a transport system. This approach is normally not to be recommended because it covers only a small part of the total transport and needs many devices that can only be used in the close circuit system.

The multilateral approach is generally more successful. This is normally generated through standardisation. Standardisation, in opposition to a cartel of some parties that arrange for similarities in the offer to the market, is an open process that allows all interested parties to join into the deliberations. This process gives the best guarantee to safeguard competition on the one hand, and to arrange for harmonised interfaces in the various applications.

The intermodal carriers in USA combine overseas import/export container flows and domestic consignments. The big ports at the Pacific coast form major concentration points for import and export container flows, but the related inland terminals serve as well local industry handling domestic units such as semi-trailers and domestic containers. One of the reasons for the commercially successful operation of US railways is their ability to concentrate both flows, the import/export and the locally generated cargo, into one block train system.

These block trains carry both types of units - US domestic containers and ISO containers. With other words: The economically detrimental separation of combined transport flows into ISO

container movement and European swap body movement is not a result of differing container design following differing modular patterns, but of market separation as a strategy of the inland carriers.

Insofar, the conflict ISO container versus ISO pallet and European distribution system remains, but the European industry has obviously well arranged with the dual system. The ISO container does not play any role in European transport. The economic problem of two different types of containers in the European transport system remains. But the main problem is obviously not caused by the physical difference, but by market and product differentiation that tries to keep both units in a separate transport regime.

Conflicts in current intermodal standardization is illustrated in the UTI Final report and can be included in future discussions of the outcome of the CEN workshop 1999-12-13/14.

Peter Wildschut, IRU

During the following discussion of European transport as such it was informed by Mr. Peter Wilschut, IRU, that the European Council and ministers did not go further in 1998 in the liberalisation of the railroads in Europe. However, in business-to-business discussions it was agreed to promote the convened transport as important for a sustainable development with environmental benefit. The transport prices are nowadays very high and only big operators can succeed to make it profitable in long distance transportation. It should be profitable to make combined short distance transport in Europe as well. To make an attractive market for combined transport would call for easy access to railroad at much cheaper prices

He recommended a horizontal transfer technique in transport systems which should be designed for all transport means (road, rail and sea).

The system should be
- quick, flexible, safe and within fixed schedules
- reliable with low technical complexity
- facilitate small scale terminals
- cost efficient
- involve a low number of personnel

There should be
- gantry crane(s) with counter-balanced truck(s) as backup.
- direct or indirect transhipment throughout the day
- marshalling of wagons instead of transhipment of unit loads
- ISO-containers, swap bodies and semi trailers

The system should
- be able to transport 20- and 40-foot ISO containers and ought to be able to transport swap bodies
- have a high utility to gross weight ration

- have a large cube capacity, and
- enable gradual implementation

When looking into the future, the transport would be “business to business”.

And if transport Car Con Train there ought to be improved terminal facilities for sliding rail transfer of goods between trailer and rail wagons. The disadvantage is, however, that it is not practiced yet as electricity lines of rail roads shall first be harmonised.

Besides there should be
- direct shuttle trans for large flows
- network modules for small and regional flows
- links between modules at gateway terminals
- flexible use of resources 24 hours a day
- transhipment under the overhead contact line
- accommodate various standards of freight containers and swap bodies

Other improvements on e.g. semi-trailers as vertically adjustable floor as the Stenhagen’s system will also optimise the transport by road.

For environmental reasons it is not necessary to use combined transport for short distance transport where the prices are high. To optimise such transports the concepts should be

- less space and less equipment. *It can be obtained through standardization.*

Several stakeholders supported the importance of dimensional coordination in relation to optimisation of transport. Furthermore, it was emphasized that a must for multimodular transport is fixed time schedules. The system has to be rationalized on a high value basis but the authorities should not be mixed into the discussions. The need for standardization will come out of the rationalisation being a top need for efficiency.

Modular coordination

Dr. Seidelmann went on with information from the above study on future standardization needs for intermodal loading units in Europe.

General considerations
Any European loading unit has to follow certain requirements that are mandatory. The following basic features of European logistics have to be met under almost any consideration:

Considerations from the logistic demand side:

- The European loading unit must offer a good answer to the logistic demand of the European industry.
- The European loading unit must offer as much cubic space as technique and legislation allows.
- The European loading unit must give good loading patterns for European pallets and small load carriers 800 x 1200 mm and 1000 x 1200 mm base dimensions.
- Since the European loading unit operates mainly on short and medium length corridors, it will be loaded and discharged frequently, and it should be designed to offer easy access to the inside loading room.

Consideration from the side of the transportation industry:

- The European loading unit must keep within the dimensional envelope of European road vehicle legislation.
- The European loading unit must be designed to fit in most of European rail corridors.
- The European loading unit must be designed to fit in most of the important European inland waterway corridors.
- The European loading unit must be designed to fit in European short sea shipping.
- The European loading unit must fit into well established systems of intermodal transport, such as container and swap body transport systems, especially as regards lifting devices and fixing on vehicles.
- The European loading unit must offer a good safety record, as the well established systems of intermodal transport do today.
- The European loading unit must keep within the marking and coding systems used by the established systems of intermodal transport.

Dimensions - outside and inside - and payload

Length

The length consideration offers many parameters that ask for optimisation:

- European palletised unit loads ask for an inside module of 800 mm, 1000 mm, or 1200 mm.

- European road vehicle legislation allows for an outside load carrier length of the articulated road vehicle of 13 600 mm, and for the road train of 7 820 + 7 820 mm.

Transport economics would prefer a system of units, that is modular, i. e. 2 smaller units make up 1 larger unit, e. g. the 2 units that form a road train make up 1 full load of a semi-trailer.

As a rule of thumb, a need of 100 mm for each end wall or end door must be calculated, so that from any selected outside dimension 200 mm have to deducted to arrive at the inside length offered for loading. The actual value for these wall and door construction will finally depend from the strength feature needed for such parts of the unit.

Furthermore, if the inside is organised as a multiple of pallets, one must consider that palletised units loads need a certain plus tolerance for loading, because they might come into transport not correctly stowed, i. e. with an overhang, and the loading operation needs some small side shift to manoeuvre the pallets by fork lift truck. In the end, a need of 10 to 20 mm space between all palletised units and the unit and the side or end wall must be realistically calculated to offer sufficient room to offer accommodation for such needs.

If the 3 pallet dimensions that are mainly occurring in European logistics are taken into account, i. e.

- 800 mm
- 1000 mm
- 1200 mm

the first common denominator is a length of 12 000 mm. 100 to 300 mm further length for space between the pallets + 200 mm additional length for the walls is needed, so the theoretical calculation ends at a need for 12 500 mm outside length to form an optimum in flexibility of accommodation of palletised loads.

If the rigidity of the common denominator is reduced, as one can assume that pallets can be loaded lengthways or transversally in the unit, the optimum must take into account only the 800 or the 1200 mm of the above pallet values, and the calculation ends up with some additional nominal optimums of

- 6000 mm + 50/100 mm space + 200 mm end walls = 6 300 mm
- 8000 mm + 100/200 mm space + 200 mm end walls = 8 400 mm
- 16000 mm + 200/400 mm space + 200 mm end walls = 16 600 mm

If transport operators desire to realise a modular system of European loading units that would best fit into transport optimisation of road trains and articulated road vehicles alike, two possible concepts can be designed:

- 6 250 + 6 250 mm length for the road train, and 12 500 mm length for a semi-trailer, or
- 8 300 + 8 300 mm length for the road train and 16 600 mm length for a semi-trailer.

These optimum concepts have their shortcomings in current practical life:

- Since road transport carries some 80 % of all European freight volume, we have - whatever we do - to consider the compatibility with the legal environment and the infrastructure of road transport as a main issue, said Dr. Seidelmann.

- The 6250 + 6250 mm length for the road train, together with the 12 500 mm length for a semi-trailer concept reduce currently possible road vehicles loading length by some 10 %, and decrease overall productivity of the system road transport considerably. Such a concept will not be acceptable for the European economy and for the European Council.

- The 8300 + 8300 mm length for the road train and 16 600 mm length for a semi-trailer ends up at a road vehicle with some 20 000 mm overall length, and this seems currently not accepted by the public and the transport policy. Nevertheless, most modern highways in Europe would be capable to accommodate such units. The main problem from the point of view of infrastructure is the operation of very long road vehicles in downtown areas and in historical villages. The USA allow such length semi-trailer, but it is reported that this size cannot be operated even in certain areas of the USA because it is too long.

Given these considerations, the optimum concept from a view of polarisation must be dropped, and a “second best” solution must be approached. When doing so, the maximum length currently allowed must be checked against the polarisation patterns and the modular concepts.

A European loading unit optimised to European semi-trailer legal length would have an outside length of 13 600 mm, offering an inside length of 13 400 mm. This would allow for pallet loading (including a 15 mm space between the pallets) of

- 13 rows of 1000 mm pallets, resulting in a total loading length of 13 210 mm with a loss of 190 mm, or
- 11 rows of 1200 mm pallets, resulting in a total loading length of 13 380 mm with a loss of 20 mm, or
- 16 rows of 800 mm pallets, resulting in a total loading length of 13 055 mm with a loss of 545 mm
- 33 pallets of 800 x 1200 mm with some pallets loaded lengthways, some sideways.

Summing up: A 13 600 mm long European loading unit loaded at a lengthways loading pattern can achieve a space utilisation of 96 % to 98 % in normal case; this is a fairly good figure that approaches nearly full optimum.

A 45 ft. semi-trailer would offer additional some 120 mm inside loading length; this would not add up in any additional pallet loading. The offer of additional loading length must be further reduced, because for legal requirements such a unit must have placed the front corner posts at a 13600 mm length concept so that any additional lengthways loading space cannot be offered over the full width of the unit.

A European loading unit optimised to European road train dimensions includes a small additional complication: The operator can select a road train with special short coupling device (which is rather costly and cannot be freely coupled to each available trailer) offering a loading length of 2 x 7820 mm, or European road train with a “normal” coupling system offering 2 x 7450 mm loading length. In all cases, the calculation must be based on a solution with 2 similar “twin” European loading units on a road train. This allows to change them freely between lorry and trailer, and it follows a concept that is widely preferred by European road operators that use such road trains.

Taking the 7 820 mm units that offer 7 620 (max. 7 720) mm inside length, this would allow for a pallet accommodation (including 15 mm space between the pallets) of

- 7 rows of 1 000 mm pallets, ending at 7 120 mm, having a loss of 500 mm, and achieving a length utilisation value of 93 %,
- 6 rows of 1 200 mm pallets, ending at 7 305 mm, having a loss of 315 mm, and achieving a length utilisation value of 96 %,
- 9 rows of 800 mm pallets, ending at 7 350 mm, having a loss of 270 mm, and achieving a length utilisation factor of 96 %.

Pallet loading capacity of a 7,15 m swap body

Summing up: The 7 820 mm unit does not offer additional pallet accommodation compared to a 7 450 mm unit with an inside length of some 7 300 mm which can be achieved under realistic strength features. The 7 450 mm box does not need a specific coupling system road train. It can be operated by standard road equipment, and can be basis for a standard solution.

But some cases may occur when an operator has to carry palletised cargo into one direction, and non-palletised high volume items into the other direction. In such a case, the use of a swap body with maximum cube, i. e. a 7820 mm long unit, can be desirable even if such a unit does not accommodate any more pallets than a standard 7450 mm long swap body.

The solution with a class A European loading unit with 13 600 mm length and a class C European loading unit with 7 450 mm length creates a system

- with the disadvantage to be not modular,
- with the advantage to fit into current European legislation on road traffic,
- with the advantage to offer load space utilisation for palletised European loading units between 97 and 100 %.

Possibly, a swap body used for delivery operation might need specific additions such as doors that can be folded upwards, or a hydraulic lift at the end door, which will add to the outside envelope. But as 7450 mm length is not the very limit of European road legislation, there should be sufficient room for such additional features within the envelope legally allowed.

The UTI Study team recommends under current legislation a class A European loading unit with 13 600 mm length and a class C European loading unit with 7 450 mm length.

Width
The discussion of an optimum width concept will be organised the same way as the consideration with the length question. Basic assumptions are:

- A construction depth for the two side walls of 50 mm each is needed so that the sidewalls use some 100 mm of the total available width. Special sidewall constructions with less thickness are available, but with either less strength or with some infringements for the design. Such sidewalls would end up at a thickness of 35 mm each, and so need a space of 70 mm for the sidewall construction.

- A 10 - 20 mm space between the pallets and the pallet and the wall is needed, in average 15 mm.

Two 1 000 x 1 200 mm pallets side by side need an available width of 2 445 mm, three 800 x 1200 mm pallets need an available width of 2 460 mm. If 90 mm for the sidewall is added, we arrive at 2550 mm. This value is similarly the legally allowed maximum in European road transport. A design with small thickness sidewalls could save another 20 mm outside width and arrive at a unit of 2530 mm. When reducing the inside possibilities for pallet side shift, possible another 10 - 20 mm width can be saved. Dr. Seidelmann informed that some experts have offered the opinion that especially units that go on short sea routes might preferably built to smaller inside to offer a minimum of space between the pallet loads and so to avoid a side movement of the cargo during sea transport.

In rail transport, most corridors that can accommodate intermodal transport loading units with a height up to 2 900 mm and a width of 2 500 mm, can as well accommodate such units with 2550 mm width. The additional 50 mm upper corner distance has to be checked carefully, but today such units are operated without too much trouble in most parts of the European intermodal rail network. A semi-trailer with full 4 000 mm height can be carried in Central, and East and North European rail networks, and cannot be carried in West and South European networks, whether it is 2 500 mm wide or 2 550 mm wide.

The value of 2 550 mm seems ideal mainly from the point of view of road transport and road/rail intermodal transport, but includes two smaller disadvantages:

- The US domestic system of loading units has introduced a width of 2 590 mm, and European thermos-insulated units have a width of 2 600 mm. These variations might create difficulties when later all loading unit systems merge to a world wide system.

- The European inland waterway vessels, as far as they are specially designed to operate in the West and Central European canal network, have to follow the standard width of the locks in these canals and can, under consideration of the need for a free board, not offer more than 10 000 mm inside width, allowing four rows of containers with a width of up to 2 500 mm each. A container of 2 550 mm width could only be accommodated in three rows, this resulting in a capacity loss of some 25 %. This argument does not apply to such container transports that are operated on the Rhine and the Danube, because these two river systems do not have locks, or have wider locks.

- A European loading unit with reduced outside width of 2520 mm might offer some advantages in short sea transport: It might be designed similarly to the current Sea Cell concept and so carried in the cells of a container ship that has been designed to carry containers with 2500 mm width. But the length deviation (ISO 20/40 ft. containers have a length of 6180/12200 mm, the proposed European loading units have a length of 7450/13600 mm) has to be solved anyway, and this will inevitably create the need for either an adaptation of the cell structure or for the design of a flexible cell structure when using cellular ships.

- The UTI study team recommends under current legislation, a loading unit width of 2550 mm .

Height

When considering the height, the height limits offered in various modes of transport shall be investigated, and the needs of European logistics shall be asked for, basing all these considerations on the obviously everlasting need for additional cube capacity of the logistic service providers.

European road traffic legislation foresees a height limit of 4000 mm. Taking into account bridge underpass height in most European through roads, this height limit reflects the possibilities in large parts of the infrastructure.

The loading platform of a semi-trailer is normally 1000 - 1100 mm above road surface, so road transport as a general rule will be able to move a European loading unit up to 3000 mm height. Platform heights of 800 mm (and even less) seem to be technically possible, but go together with difficulties in design and operation. Special design tractors with very low 5th wheel and low diameter tires that might infringe the load (mass) carrying capacity are needed. These special features will be certainly more costly than normal design vehicles. So we conclude that road will be confronted with some difficulties when loading units exceeding 3000 mm height have to be carried.

Rail is certainly much more infringed. ISO containers of 8 ½ ft. height (2590 mm) can be operated on almost all major European rail corridors. ISO containers with 9 ½ ft. height (2950 mm) can be moved rather freely in Central, North and East Europe, but need very specialised equipment for Italy, France, Spain, and in Alps mountain transit, especially when they are 2 550 mm wide. Units of almost 3 200 mm height have been reported in rail traffic operation between Germany and Spain, so that we may conclude that railcars are available even for the operation of such units on rail. Generally speaking, it seems like that rail can move - sometimes with special equipment needed - a European loading unit with a height up to 2900 mm.

Short sea shipping often transfers two loading units one on top of the other mounted on low bed special trailers on board ship in Ro-Ro operation on some of their decks. Many modern ships are prepared for such type of transfer. These decks are normally equipped with door openings and deck clearance of 7000 mm height that care for the combined height of two containers up to 9 ½ ft. height + the low bed trailer with a 700 mm platform height. Loading units with a height of 3000 mm or more would create difficulties in this type of two layer transfer. They must be moved in one layer on board ship, decreasing the productivity of the transfer operation by almost 50 % for loading and unloading of the decks that allow double height stacking.

It is more difficult to calculate from the outside height to the inside loading height offer, since this calculation includes some far reaching assumptions about the design construction of the unit. If the design of the loading unit is based on a steel frame and full supporting material (e. g. corrugated steel panels) side and end walls, bottom and roof construction need some 150 - 200 mm. If a swap body type design is applied with a floor part to take over alone most of the load

stresses, and eventually a full side wall left open and covered only by a tarpaulin that does not add anything to the strength of the construction, the floor will have to be designed considerably stronger, i. e. with higher longitudinal bearing members resulting in less usable height for the interior. Furthermore, some design of corner fittings in units longer than 40 ft. will result in infringements of usable height in the roof area

- The Study team of UIT recommends an outside height of 2900 mm for the European loading unit. Increasing demand for special European loading units offering an inside loading height of 3000 mm can be foreseen and may have to be accommodated in standardisation in future.

5) 1999-12-14 Workshop consensus on new CEN work items
With due regard to COM (97) 243 Final advocating a systems approach to the development of freight transport, and in recognition of the integrated supply chains that are increasingly enabled through transparent IT systems, it is proposed that a forum/workshop is convened to establish just how a fully integrated domestic set of transport standards applicable to continental Europe (inc. short sea), based on intermodality and flexible modularity, may be developed that can be applied to fully utilize the capacity of freight corridors in all nation states. If a satisfactory level of infrastructure is going to be developed in time, it is of vital importance that EU Policy interest is informed of the regulation, harmonization and other instruments needed for this to be achieved.

6) 1999-12-14 Workshop consensus on new CEN work items
The workshop recommends to standardize an intermodal unit of European semi-trailer size, stackable and offering optimum internal space for European standard loads, to serve in future European international transport in addition to those units that are today already in service.

7) 1999-12-14 Workshop consensus on new CEN work items
The workshop notes the ongoing activity in the European action cost 339 on small containers and recommends considering standardization in this field based on the results of the “cost action”

Mr. H.-J. Molstrand, DS, gave - out of the agenda and after consultation of the CEN/TC 15 secretary, Mr. Mann - a short introduction to standardization activities in CEN and ISO for the *maritime industry.* The CEN/TC 300 not being represented at the workshop would receive a report after the meeting.

Technical Committees:

- CEN/TC 15 Inland navigation vessels
- CEN/TC 300 Seagoing vessels and marine technology
- ISO/TC 8 Ships and marine technology

It is recognized that a number of issues highlighted during this workshop is important also for the maritime industry. Some issues are already included in the work programme of the maritime TCs, and other issues will be reflected in the near future.

What first of all comes to the attention for the specific maritime TCs are the issues of

- environmental impact and emission data
- energy consumption and comparison data
- intermodal transport systems and equipment

As for the first two issues, environmental impact and energy consumption, Mr. Mann who is secretary of TC 15 and present at the workshop, and Mr. Molstrand representing TCs 300, will make the preparatory arrangements in TC 15 and TC 300 in order that these TCs in a coordinated action can prepare standards on these issues and can participate in the broader CEN work with respect to conclusion 1 of this workshop.

In this context, the maritime standardization will make a careful study of the documents developed in the European Ports as reported by Mrs. Le Garrec, ESPO.

As the third issue, intermodal transport system, this issue is already included in the work of maritime standardization by 2 means:

CEN/TC 15 has for some years been working on work items in this respect. The most topical items are:
WI 19 Requirements for reloading facilities
WI 23 Requirements for the transport system “Inland Navigation”
WI 24 Procedures involved in the transport system “Inland Navigation”

This workshop will surely give inspiration to increased efforts on these three work items.

ISO/TC 8 has recently established a new SC11 for intermodal transport.

Title: intermodal and short sea shipping
Scope: Standardization of general issues; principal requirements; design construction and operation of ships and equipment; and technology for intermodal, including ship/port interface and other modes of transportation, and short sea shipping (SSS).

The secretariat and chairman for SC11 is placed in Romania.

At this background TC 300 will be prepared to take intermodal transport up on its programme, and to offer its results as contribution in ISO/TC 8.

Equipment, handling equipment and terminals will be very much in focus in the effort in the maritime standardization.

Both TCs will look forward to share their efforts for intermodal standardization with other CEN/TCs who are working dedicated at standardization for different aspect of intermodal transport.

Mr. Molstrand found that the workshop had identified the need for some kind of coordination of these efforts. He took the opportunity to clarify the situation why CEN/TC 15 and CEN/TC 300 are both needed as independent TCs in CEN.

TC 15 Inland Navigation Vessels are developing European standards for river and canal transport. The Technical Regulations for this field is first of all set by the Rhine Danube Commission and by a European Directive for specific inland waterways. Further, and also important, Inland Navigation vessels are not covered by the International Maritime Regulations set by IMO.

CEN/TC 300 covers Seagoing vessels and maritime technology. A wide range of technical regulations is set by IMO, the International Maritime Organisation. The international counterpart as for standardization is ISO/TC 8 Ships and Marine Technology. The European Directive for Marine Equipment is current for sea-going vessels.

Finally, the work in TC 15 and TC 300 has for many years been coordinated quite sufficient by two means:

- The secretariats for both TCs are placed at NSMT in DIN, located in Hamburg. (TC15: Mr. Mann. TC 300: Mr. Schade).

- Many national standards institutes in Europe have one single national committee for maritime standardization as mirror committee for both CEN TCs.

Why the work in the two TCs is coordinated both at the administrative level and at the operational level, including the technical content of the standards. The following conclusion was made by the workshop:

Conclusion 3 (1999-12-14)

The workshop identified the need for improved co-ordination of efforts in separate CEN/TCs on different aspects of intermodal transport systems, in order to obtain a coherent set op European Standards

Conclusion 5 (1999-12-14)

The workshop concludes that there is a need for a closer dialogue between CEN and the Commission, in order to evaluate the merits for standardization within the Commission's work on infrastructure charging and notably the application of social marginal costs (infrastructure damage costs, congestion and scarcity costs, environmental costs and accident costs etc.).

Terminals

- **Mr. Ernst Demand,** former chairman of the Austrian standardization working group on terminals

He introduced the seven parts Austrian national standards on transhipment of goods.

During the later discussion it was informed that ISO has some activities on procedures in relation to container terminals as such. However, it was important to keep the item on the CEN agenda in relation to intermodal transport ensuring flexibility and the exchange of information between parties.

Alignment between standardization may be necessary and it is not about competition; the market wants to operate, promote and integrate interests, taking the exchange of information between parties in account.

In relation to navigation vessels, requirements for port facilities should be discussed from the angel of best practices. A collaboration of standardization efforts was recommended.

Conclusion 4 (1999-12-14) The workshop recognizes the needs for information on performance on EU terminals and will consider to establish a code of best practice on the basis of ongoing projects.

Public regulation and pricing

External effects of transportation

- **Mr. Keith Keen, EC DG7**

informed on current pricing policies emphasizing that to collect the charges is easy.
He emphasized that most charging systems do not consider social and environmental aspects, which raises costs for business, government and society. The European community is facing financial pressures constrain infrastructure investment. The different approaches to charging distorts competition between Member States and distorts competition between modes (raises costs for operators, managers, and users).

He referred to the European dimension - the single market on transport which gives different perspectives:

- European-wide transport costs

- The subsidiary principle
  - to provide a framework rather than centralised charges
  - to apply to international transport flows
  - to require non-discriminatory charging
  - to require transparency
  - to improve “territoriality”

And recommended the users pays principle as “Users should be charged according to the costs they impose at the point of use”, including:

- Infrastructure damage costs
- Congestion and scarcity costs
- Environmental costs
- Accident costs

The 1998 White Paper on “Fair Payment for Infrastructure Use” gives 3 key aspects of transport charging:
- Distort competition between member states and modes
- Raises costs for operators, managers, users
- Raises costs for business, government and society

Phase one of the implementation is:
- Eurovignette agreement
- EFC communication published

- Railway directives before Council
- The ports costs survey with Member States
- Airport charging proposals before Council
- Aviation charges under review

Mr. Keen informed that there were no legislative aspects in the 5th Framework Research Programme. Further that the Committee of Government Experts on infrastructure charging, a High Level Group on infrastructure charging which has given three reports: in 1998 on pricing principles, in May 1999 on cost estimation techniques, and in September 1999 on charging options.

To determine the cost drivers – starting with
- defining costs
- defining cost categories
- determining impact and causal links (cost drivers)
- cost attribution
- calculating monetary value
- considering charging mechanisms

the need for standardization as a tool for each of these boxes should be considered. But it is difficult to recommend standardization as an instrument in the EC policy, if the Commission does not precise the tasks.

When reflecting the market costs the High Level Group questions what should charges look like? Should they effectively reflect marginal social costs? Or, should they contain full appraisal requirements as

- effectiveness in achieving the polity goal
- the degree of transparency and simplicity
- compliance and enforcement
- the acceptability of the policy to differing views the cost of implementation, operation, information and transactions?

If reflecting marginal social costs, greater territoriality, variability and differentiation shall be taken into account.

Mr. Keen concluded that the need for standardization as an instrument in the EC policy would be discussed with member states, stakeholders, and the European Parliament. It could furthermore be considered in relation to the Fifth framework research programme and member states pilot studies, and in relation to future revision of legislation (e.g. the Eurovignette Scheme 2002).

In the following quality dialogue on environmental issues the importance of harmonising the presentation of efficiency data was emphasized by Mr. Poul Bruun, ITD, as an effective tool of competitivity for the transport industry. As the public regulation and pricing was very different in EU the industry needs simple and effective data models as management input. Tools that cover the whole transport sector and which generate data with indication of some levels. Up till now the

CEN/TC 320/WG2 has worked on this issue as informed previously in the workshop. The application of green electricity in the railway sector is not included in this work.

The standardized evaluation of the emission data from transport on road, air and see should be part of a code of better practice for shippers and carriers.

Labour conditions

- **Mr. Finn Zoëga, The Danish Technological institute**

The manual handling in the supply chain is a topic for discussion in Denmark for retailers, authorities and labour organisations. Especially the heavy burdens give problems, but limits are at the same time regulated by the Danish law.

There are different limits for the carrying weight depending on the character of carriage. If the ergonomic lifting rules are taken into consideration there are no limits in Denmark for number of lifts of a package of 3 kg; for burdens above 3 kg the following limits are valid according to the Danish labour rules and regulations valid for both men and women.

- 10 tons/day/close to the body.
- 6 tons/day/in horizontal forearm 30 cm from the body.
- 3 tons/day/in horizontal forearm 45 cm from the body.

The limits of weight are < 3-7-11 kg.

It was informed that the problem of “Heavy burdens in the Supply Chain” during 1998-999 under the title “Working Environment” has been discussed in a forum of the Grocery Manufacturers of Denmark (DLF) and all major Retailers in Denmark. The subject was “all products in Grocery”.

The following observations were noted:
- Little or no automation in the supply chain
- All manual handling – terminals and shops
- Problems have been solved individually in each company
- No survey in the Supply Chain
- Very little benchmarking on problems and solutions among partners in the Supply Chain
- Positive development in reducing unit weights – 15 kg
- Many problems could be solved by using standardised modular spaces and unit loads
  - Packaging and Transportation

The following problems were registered:

- All product groups, but especially fruit, vegetables and dog food, are:
  - in heavy units
  - odd measurements

- Bottles, beverages
- High stacking of pallets
- Lorries, trucks and containers
  - different rules
  - little development in working environment
- Standard pallets – all of which in modular types
- Standard recycle boxes

Concerning the transport the project recommended space improvement by minimizing air, optimising each unit up to standardization modules and eventually subdividing the carriage in two trailers connected to one truck. This is a good solution, but unfortunately for the environment very seldom in practice.

The conclusion of the project was that it is cost effective from a commercial interest to develop standards. However, in relation to the Danish project on working environment the existing standardization is up-to-date, but this standardization shall be applied and respected by all stakeholders of the logistic chain.

Conclusion 6 (1999-12-14)

The workshop notes that there are problems in manual handling, and concludes that many problems can be solved by using existing standardization.

Legal Conditions

- **Professor, Dr. of Law, Ralph De Wit, the University of Brussels**

1. Definition of Multimodal Transport cf. art. 1, §1 of the Multimodal Convention 24th May 1980: *"International multimodal transport" means the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery in a different country.*

Dr. De Wit informed that the same definition is given in the New Dutch Civil Code and the new German transport law. But the legal response to a complete "International multimodal transport" is practically non-existing. The European legal framework is not up to date.

***2. Transport integration*:** The enormous developments of container transport and of combined or multimodal transport have changed the face of the law of carriage of goods considerably. It is most certainly so that the ever increasing use of containers has promoted the development of combined transport to a very large extent and this has had a direct reflection upon the traditional role of the freight forwarder. Briefly said, a forwarder was primarily looked upon as an agent who acted for a principal in the organisation of a transport operation. The above developments have brought about the integration of transport operations to a very large extent. With this, the traditional view of the freight forwarder has changed as well.

In order to clarify the evolution, which a forwarder has gone through, this integration process in itself merits some attention. Provided that the technical possibilities are present (which nowadays is largely the case at least in the industrialised nations), ideally one person will be acting as carrier for a complete carriage from beginning to end and accepting responsibility for the goods throughout. This is a relative newcomer on the transport scene. The multimodal transport operator (M.T.O.) or combined transport operator (C.T.O.). In many cases, this is a traditional carrier who, as one of the original participants in the chain of transportation, extends his activities to other links in the chain. A frequent example is a sea carrier who offers hours-to-house carriage. He may sub-contract the land trajectories or, taking the integration process a step further, he may develop his own land-carriage activities, for instance by acquiring an existing trucking company. This process may also work the other way round, although this is less frequent because of the enormously capital-intensive character of sea carriage. Nevertheless, in the United States there is at least one widely publicized case where a privately owned rail carrier has acquired a shipping line in order to integrate its transport activities. But, and this is where freight forwarding comes in, he may be a non-participant in the original transportation chain, i.e. a freight forwarder who has made the transition to carrier.

A third, less important, integration model is where an actual M.T.O. is still contacted by a freight forwarder acting as intermediary.

Model A, the freight forwarder organizes the whole transport. He acts as a carrier and often performs part of the carriage himself. In an ideal situation, he will also accept full liability for the carriage from end to end. In other words, he acts as a principal, although precisely this point will often be the cause of serious problems, which will be treated further on. For the sub-contracting carriers, this situation may be somewhat disadvantageous from an economic point of view, since their direct contacts with relatively numerous cargo interests are replaced by contacts with relatively few freight forwarders. These will try to control the market as much as possible, reducing the actual carriers' ability to negotiate with cargo interests.

*Mode*l B, the whole transport is organized by one carrier, who has extended his activities to other modes of transport. The added value that is provided by the freight forwarder in model A, consisting of the organization of door-to-door package which is offered to cargo interests, here reverts to the carrier as well.

Model C, the freight forwarder acts as a simple intermediary between cargo interests and one carrier offering integrated services. There are various reasons for such a situation to develop. For instance, one freight forwarder may be in charge of the carriage of the goods of one consignor to a large number of destinations. For those destinations for which integrated transport services

exist, he need not bother organizing the door-to-door carriage himself. Furthermore, the freight forwarder will locally often have a better marketing position than the carrier offering integrated services. He will simply be "easier to reach": He may have offices in several cities in the same country and he may advertise more widely, whereas the carrier's sale organization is necessarily stretched out more thinly over a much larger area. The freight forwarder will often also be capable of offering a more personalized and flexible service.

Model D, the freight forwarder in his traditional role; as the architect of the carriage operation, but no more than that. He acts as an agent for the cargo interests and does not himself assume any carrier liability.

***3. Definition of freight forwarding*:** A freight forwarder must be clearly distinguished from the other legal entities described above, and furthermore, his role in the transport network, must be clearly defined. In other words, it must be established whether in a given set of circumstances he is acting as principal or agent. This may give rise to considerable difficulties in practice.

As was already briefly mentioned above, traditionally a freight forwarder is not a carrier, but an auxiliary person, a professional intermediary between the cargo interests and the carrier, who arranges and organizes the carriage of goods from departure to destination, but who does not undertake a carry himself and who does not accept liability as a carrier. The freight forwarder's position is often humorously summarized in the slogan "we forward all you like, but we do not carry it".

Traditionally, therefore, the freight forwarder acts as an agent and contracts only to arrange carriage, acting on behalf of the cargo interests. In the common law systems, he is under a duty to exercise reasonable skill and care. He must perform the undertaking and to this end, he must select qualified personnel, otherwise he will be guilty of a so-called *culpa in eligendo*. He must follow instructions and may not exceed his authority. This general statement is also true in continental law.

In Dutch law, the freight forwarder may represent the cargo interests directly or indirectly. Direct representation means that the forwarder acts in the cargo interests' name and for their account. Indirect representation means that he acts in his own name, but for the cargo interests' account; the principal remains undisclosed. (In Belgian and French law, the freight forwarder is generally a *commissionaire*, meaning someone who contracts in his own name but for the account of his client; again, the principal remains undisclosed. He may also contract in the cargo interests' name, thus disclosing his principal, but this would appear to be fairly rare. In German law, the freight forwarder is under a legal duty to contract in his own name but for the cargo interests' account; in other words, he is not allowed to disclose his principal.

The principle, therefore, seems simple enough. A carrier undertakes to *carry* goods. A freight forwarder undertakes to *arrange for the carriage* of goods. However, uncertainty arises because of two major reasons.

First, the changing nature of carriage of goods, and more precisely the advent of the above described intricately organized door-to-door transport networks and multimodal transport in

general, has induced many freight forwarders to take on greater responsibilities. This was illustrated above with the so-called integration model A.

Secondly, some freight forwarders tend to create the impression that they are acting as carriers, while they are actually only acting in their traditional role of agents. For instance, the freight forwarder may charge a fixed sum for the carriage, thus suggesting, perhaps unwillingly, that he will perform the carriage himself, instead of a percentage on all freight, the amount of which should be disclosed to the consignor. From a commercial point of view this may be desirable in order to impress an inexperienced customer, but it may lead to disastrous results. Furthermore, the activities that freight forwarding encompasses are not really clear. Taken in its narrow sense, freight forwarding simply means the arranging of transport and nothing more. Taken in its broad sense, a host of other activities may be included, such as tallying, weighing, packing, warehousing, pick-up and delivery, physical distribution, performing customs formalities, and so on.

The distinctions as between carrier and forwarder, so straightforward in theory, are immensely important in practice. A carrier is mostly subject to mandatory rules imposing a minimum standard of liability in relation to the goods that he carries. Usually, he cannot contract out of this regime. A freight forwarder is in a more comfortable position. As the status of freight forwarder is not regulated by any international convention and only in a few domestic laws, he retains a considerable amount of contractual freedom, which allows him to use exemption clauses to a much larger extent than any carrier. Consequently, the basis practical issue will almost invariably be whether exemption clauses, which are contained in the contract passed between the cargo interests and the person purporting to be a freight forwarder, will become void or voidable because of this person's subsequent qualification as a carrier.

4. Caveat: commissionaire de transport. In continental law, the matter is complicated even further, because a third, separate entity exists in some legal systems. This is the c*ommissionaire de transport* in French and Belgian law, and the *transportondernemer* in Dutch law. He is situated in between the freight forwarder and the carrier. The *commissionaire de transport* is not a carrier as such, he *lets* goods be carried. In fact, he is a contractual carrier who sub-contracts the whole carriage to an actual carrier. Because of this physical inactivity, he is sometimes called a "paper carrier". The distinction as such is rather meaningless, unless , as is the case in French law, a separate legal regime is attached to it.

In Belgium, the *commissionaire de transport – vervoercommissionaire* still exists, but he has been made subject to the same regime as an actual carrier. Consequently, the only remaining important distinction is that between freight forwarders and carriers. The situation is the same in The Netherlands, where the qualification of *transportondernemer* has been deliberately left out of the New Civil Code. In German law, the distinction has never been made.

French law has taken a totally different direction. A *commissionaire de transport*, a contractual carrier who independently organizes the transit of goods without actually carrying them, is subject to a specific and quite complicated legal regime. His responsibilities are much more comparable to those of a carrier than those of a freight forwarder. Although a *commissionaire de transport* retains his contractual freedom to insert exemption clauses into the contract of carriage (whereas a carrier cannot do so), he is in principle strictly liable for loss of or damage to the goods.

Furthermore, he is vicariously liable for the fault or neglect committed by servants, agents and independent contractors employed by him. Obviously, this status is much less attractive than that of simple agent, a *transitaire* (an agent whose activities relate to the transit of goods) or a *mandataire*. But the possibilities for a freight forwarder to be recognized as such in French law are very remote indeed. The freight forwarder must then act under close instructions from his principal. He does not have any freedom whatsoever in the organization of the carriage, in the choice of the mode of carriage and in the choice of the individual carriers.

In the majority of cases, however, the typical activity of a freight forwarder will cause him to be qualified as a *commissionaire de transport*. The criteria, which are used to arrive at this qualification, are applied very liberally by the courts, making a different outcome rather unlikely. A full review of these criteria and of the *commissionaire de transport's* liability is beyond the scope of this speech.

Due to the particular nature of the *commission de transport*, a multimodal transport operator (whether he intended to act as a carrier or as a freight forwarder) will almost be qualified as a *commissionaire de transport* whenever French law is applicable. Under certain circumstances, the *commissionaire* may be subject to an action in tort.

5. N.V.O.C.C. A specific kind of intermediary is the so-called non-vessel-operating common carrier or N.V.O.C.C. Although it is a United States creation, this expression is commonly encountered in Europe as well. It should be clearly noted that it has no real legal meaning outside the United States and certainly not on the European continent, where the concept of common carrier as such does not exist.

An N.V.O.C.C. is an intermediary between the shipper of the goods and the operator of the ship that is to carry these goods. He fulfils basically the same function as a groupage operator: he combines the goods of various shippers into a single shipment (usually in a sealed container), contracts with an ocean carrier for the carriage of the goods, and delivers the goods to the ship. An N.V.O.C.C. is defined by statue as a "common carrier that does not operate the vessels by which the ocean transportation is provided, and is a shipper in its relationship with an ocean common carrier" (46 U.S.C. app. §1702(17).

On the other hand, a N.V.O.C.C. is a carrier in his relationship with the shipper of the goods. Both an N.V.O.C.C. and a freight forwarder who issue separate bills of lading to cargo interests may incorporate the provisions of the Carriage of Goods by Sea Act 1936 by means of a suitable paramount clause, and thus be subject to the same rules of liability as a sea carrier.

The N.V.O.C.C. construction does not particularly help to remedy the confusion between freight forwarders and carriers. An N.V.O.C.C. may act as freight forwarder, as agent pure and simple for the cargo interests, so the distinction is not made any simpler.

- ***Limited freedom of contract*:**

The current situation regarding carrier liability in combined transport operations presents a picture of far greater uncertainty and confusion than is the case with the various forms of unimodal carriage.

The main reason for this confusion is that at the present time multimodal carriage presupposes on the carrier's part a voluntary assumption of responsibility, the will to "contract in". This has in the unimodal forms of carriage been largely displaced by a framework of mandatorily applicable rules, which were usually established, though with varying degrees of success, by way of international conventions. Some of these have been almost universally adopted, such as the original 1924 Hague Rules on carriage of goods by sea under a bill of lading and the original 1929 Warsaw Convention on international carriage by air. Other conventions have only a limited scope of application *ratione loci*. In Europe, the prime examples are the C.M.R., which governs international carriage of goods by road, and the C.O.T.I.F., which governs international carriage by rail. By way of parenthesis, it is a disturbing tendency in the law of carriage of goods that the unification and harmonisation, which was thus realised (albeit only per mode of transport), is increasingly breaking down because (sometimes much-needed) changes in the international regimes are much less widely adopted than the original Conventions. The foremost example of this fragmentation is the Warsaw System, which has been subject to numerous changes, each one even less successful than the previous one. If no international convention is applicable to a certain unimodal carriage, the contracting parties will still be bound by whatever mandatory rules are contained in the national law which their contract is subject to.

- ***Network and uniform*** system.

Multimodal carriage is, as such, at the present time not subject to any international convention, until the entry into force of the Multimodal Convention. On the other hand, it cannot be said that contractual freedom in multimodal carriage is at the same level as in, for instance, carriage of goods by sea in the 19th century, when ocean carriers seemed to have turned the inventing of large numbers of incredibly far reaching contractual exemption clauses into their favourite pastime. This is so because very often the appropriate rules, which would govern the various modes which constitute a particular multimodal transport were it to be a series of subsequent unimodal contracts, will also govern, to some extent, the multimodal transport itself. These rules are mostly mandatory and the carrier performing a multimodal transport cannot escape their operation. Thus the carrier is already, by force of law, subject to an embryonic form of pure network system. Under such a *network system*, the existing legal rules governing unimodal carriage are combined in such a way that wherever loss of or damage to the goods occurs, it will fall into one of the mazes of the net, which will then provide an immediately applicable solution that is totally consistent with the one that would have been reached were the transport a unimodal one. The system has also aptly been baptised the *chameleon system*, because the multimodal transport operator changes colour, as it were, each time the mode of transport by which the contract is performed changes. For instance, in a road-sea-rail combination, the operator will be treated as a road carrier during the first leg of the transport, as a sea carrier during the second, and as a rail carrier during the third, although technically speaking, he may be neither of these three, or only one or two of them.

Nevertheless, if a carrier cannot escape these mandatory rules, it remains in each particular case to be established first of all, that the person performing the contract is indeed a carrier and not freight forwarder. And secondly, if the performing party is indeed acting as carrier, it still retains considerable freedom in establishing contractual liability rules and exemptions for non-localised loss and damage (i.e. loss or damage of which its is not known during which leg of the transport is occurred and to which consequently no mandatory regime applies automatically) and for those stages of the multimodal transport that are *not* governed by any mandatory regime, such as

warehousing, transport over inland waters, and often loading, discharging and delivery of the goods. Therefore, contracts for multimodal carriage may vary considerably, leaving cargo interests uncertain as to exactly what rights and liabilities they are incurring. In other words, the network system is modified and adapted by contractual stipulations: hence its name, the *modified network system*. In contrast to this, the Multimodal Convention basically contains a *uniform liability system*.

8. Practical applications. Several practical applications have been made of the abovementioned theoretical solutions. On the one hand, an attempt has been made to create a mandatory international convention concerning multimodal transport. After extremely elaborate and lengthy negotiations, the 1989 U.N. Multimodal Convention was concluded. It tries to combine the advantages of both the uniform and modified network solutions. As this Convention is still inoperative, there is no case law to illustrate its working or gauge its effectiveness and its treatment here would serve no apparent practical purpose.

However, in 1992 a new set of model Rules was drafted by UNCTAD together with the International Chamber of Commerce, which are based to a large extent upon the Convention. These Rules are currently used by FIATA, the international organization of freight forwarders. in 1995, BIMCO – The Baltic and International Maritime Council – responded with the Multidoc 95, which is a more traditional document based upon a modified network structure. Before the coming about the Multimodal Convention, at an earlier stage one of its drafts was adopted by the International Chamber of Commerce as a non-binding set of Rules for drafting a combined transport documents. These 1973 ICC Rules (modified in 1975) are also based on the modified network system.

II The Model Rules of the International Chamber of Commerce

9. UNCTAD/I.C.C. Rules 1992. Until some time ago, the International Chamber of Commerce recommended the use of model Rules, which had been drafted in 1973 and slightly modified in 1975, for incorporation into multimodal transport documents. These Rules were relatively recently replaced with a new set, drafted in close cooperation with UNCTAD and based upon the Multimodal Convention. What follows here is only a selective review of some marked differences between the old and the new Rules.

10. Applicability

The 1975 Rules applied only if a combine transport document as defined in these Rules was issued. The 1975 Rules adopted, in this respect, the formality requirement, which was first introduced in the T.C.M. Draft Convention. The UNCTAD/I.C.C. Rules do not contain this formal requirement any more. Incorporation of the UNCTAD/I.C.C. Rules into a contract of carriage is based solely upon the parties' will and does not require the fulfilment of any formalities whatsoever. Thus, incorporation of the Rules into the contract may be done in writing, orally or otherwise. "Otherwise" may be, for instance, through certain actions or behaviour by one of the parties, which indicates clearly, and unequivocally its intention of indeed incorporating the Rules. Thus, consent may be deduced from a party's conduct.

All this is no more than an application of the general rules of the law of contact.

As to how the UNCTAD/I.C.C. Rules may be incorporated, Rule 1, §1 clearly states that simple reference is sufficient. Therefore, a party to the contract cannot escape application of the Rules by invoking the fact that it did not know the contents of the Rules and that consequently it could not have accepted them. This seems a useful addition to the 1975 Rules as not all legal systems contain the same requirements as to knowledge and acceptance of contractual terms.

Furthermore, the general idea of Rule 1, *litt.* c of the 1975 Rules is conserved in the new Rule 1, §2: The Rules supersede any additional terms of the contract which conflict with them, except to the extent that they increase the multimodal transport operator's duties or responsibilities. There is no express mention any more of the nullity of such conflicting stipulations. The new Rules simply use the word "supersede"; no provision is necessary any more as to the effect of the nullity of one contractual stipulation upon the whole of the contract. The language is simpler, and the result remains exactly the same. The basic idea of Rule 1, §2, of course, is the same as in any other convention on international carriage of goods: a minimum standard of liability which is mandatory for the carrier but which may be increased should the carrier wish to do so.

11. Definitions. The list of definitions contained in Rule 2 of the 1975 Rules has grown considerably longer in Rule 2 of the new UNCTAD/I.C.C. Rules. Rule 2, §1 defines the multimodal transport contract in the classic manner as a single contract for the carriage of goods by at least two different modes of transport. In the explanatory memorandum to the new Rules the draftsmen remark, quite correctly, that the definition should indeed focus on the multimodal transport *contract* and not, as was the case in the 1975 version, on multimodal (combined) transport as such. Without disregard for the importance of precise draftsmanship, this semantic improvement does not seem to have any practical consequences.

Rule 2, §2 defines a multimodal transport operator as any person who concludes a multimodal transport contract and assumes responsibility for the performance thereof as a carrier. This definition differs substantially from the one given in Rule 2, *litt. b* of the 1975 Rules. The difference is of course brought about by the abovementioned fact that an operator is no longer required to issue a multimodal document in order for the Rules to apply. The final phrase ("... and assumes responsibility for the performance thereof as a carrier") seems to indicate that it would be possible to conclude a multimodal transport contract without assuming such liability. It has already been submitted above that this is impossible – it is a contradiction in terms. It is of course possible to conclude a contract in which no multimodal transport operator liability is undertaken, but this would rather go towards a freight forwarding contract. Therefore the abovementioned phrase is unfortunate. By concluding a multimodal transport contract the contracting party who will perform the carriage is *automatically* liable as a carrier, and not as freight forwarder. It was probably inserted only to clarify the extent of the notion of multimodal transport operator, but it may give rise to doubt.

In Rule 2, §3, "carrier" is defined as the person who actually performs or undertakes to perform the carriage, or part thereof, whether he is identical to the multimodal transport operator or not. This definition is included simply to distinguish any performing carrier – not identical to the operator – from he operator himself, who is the contracting carrier.

The definitions in rule 2, §§4 and 5 of consignor and consignee are self-explanatory: "consignor" means the person who concludes the multimodal transport contract with the multimodal transport operator; "consignee" means the person entitled to receive the goods from the multimodal transport operator.

The definition of a multimodal transport document is substantially shorter in Rule 2, §6 than in Rule 2, *litt. c* of the 1975 Rules, but it is not fundamentally different. The document may be issued either in negotiable or in non-negotiable form. New, however, is the express reference to E.D.I. Rule 2, §§7 and 8 define the taking in charge and delivery of the goods. These paragraphs correspond to rule 2, *litt. d* of the 1975 Rules, which only defined delivery. The definition of taking in charge is again self-explanatory: it simply means that the goods have been handed over to and accepted for carriage by the multimodal transport operator. The definition of delivery has been largely expanded and, above all, clarified in comparison to its counterpart in the 1975 rules. Delivery may now have three distinct meanings. First, it may retain its colloqical significant; it is then simply the handing over of the goods to the consignee – one might add, of course, at the agreed destination. Secondly, it may mean the placing of the goods of the disposal of the consignee in accordance with the multimodal transport contract or with the law or usage of the particular trade applicable at the place of delivery. Obviously, this part of the definition refers to clauses in the contract of carriage by which the parties mutually agree to consider that delivery takes place at a given moment, whether or not the consignee is present. These so-called "delivery clauses" are quite common in bills of lading for carriage by sea. Local custom may also play an important role. Thirdly, delivery may mean the handling over of the goods to an authority or other third party to whom, pursuant to the law or regulations applicable at the place of delivery, the goods must be handed over. This last phrase refers to ports where direct delivery to the consignee or his agent is impossible because local law requires the goods to be delivered either to customs or to a nationally controlled stevedoring monopoly (which is a very common situation). All in all, this definition is much more precise than the one in the 1975 Rules.

The unit of account of the Rules is the S.D.R., as defined in Rule 2, §9. It replaces the franc of Rule 2, *litt.* f of the 1975 Rules. And finally, Rule 2, §10 defines "goods" as any property including live animals as well as containers, pallets or similar articles of transport or packaging not supplied by the operator, irrespective of whether such property is to be or is carried on or under deck. This definition is probably included to avoid any confusion with the Hague and Hague Visby Rules, which contain special rules as to the abovementioned categories of goods – confusion which might possibly arise because of the decades of practical use of Hague Rules wording.

12. Evidentiary effect of the multimodal transport document. As to the evidentiary effect of the multimodal transport document, Rule 3 follows the same line of reasoning as the Hague Visby Rules, which was already present as well in rule 9, *in fine*, of the 1975 Rules. Rule 3 states that the information in the document shall be *prima facie* evidence of the taking in charge by the operator of the goods as described by such information, unless a contrary indication, such as "shipper's weight, load and count", "shipper-packed container" or similar expressions, has been made in the printed text or superimposed on the document. The wording of the exception seems doubtful, however. it seems to imply that a pre-printed formula such as the abovementioned would suffice to take away the document's evidentiary value. This is hardly desirable and has hitherto never been accepted.

Furthermore, Rule 3 reiterates the idea first elaborated in the Visby Amendments to the Hague Rules, in stating that proof to the contrary shall not be admissible when the document has been transferred, or the equivalent electronic data interchange message has been transmitted to and acknowledged by the consignee who in good faith has relied and acted thereon.

The basic idea is that of the Visby Amendments, but whereas Rule 9 of the 1975 I.C.C. Rules used exactly the same wording as the Visby Amendments ("(...) when the document is issued in *negotiable form* and has been transferred to a *third party* acting in good faith", the new Rules contain slightly different language. First, there is no mention of a "negotiable" document any more – the text only concerns itself with the transfer of the document as such. This would seem to include the non-negotiable documents as well. Normally the idea behind a truly negotiable document is that it represents the goods and is therefore a document of title which may confer upon its holder better rights than his predecessor had. A non-negotiable document, however, does not represent the goods – it does not act with regard to the law of the property – and it is therefore not a document of title.

The Hague Visby rules concern only bills of lading, which are documents of title anyway. But conferring the same protection upon a simple instrument of proof goes quite a bit further. It amounts to a change of the structure of the contract of carriage, since in both legal systems (common law and continental law) proof to the contrary is normally admissible. Furthermore, by referring to the "transfer" of such documents, it is unclear what transfer is meant exactly. If the draftsmen mean the transfer from the consignor to the consignee, then this is no transfer in the actual sense of the word as the consignee is the named party in the document, who becomes a party to the contract of carriage, but who never has *better* rights than his predecessor. If, however, transfer to another party is meant, then this would mean recognition of the possibility of transfer not of the document, but of the whole contract. This technique, though not impossible, differs considerably in various legal systems and would best be avoided in the case of a contract of carriage.

13. Multimodal transport document as document of title under model rules.

Under the UNCTAD/I.C.C. Rules, as well as under the 1975 I.C.C. Rules, it is perfectly possible to issue a negotiable multimodal transport document (Art.4, §3 UNCTAD/I.C.C. Rules). Such a document has many of the characteristics of a bill of lading. It possesses the necessary easy transferability; it may be transferred by endorsement and delivery, if it has been issued to order (Art. 4,§3, *litt.*b, UNCTAD/I.C.C. rules; Rule 3, *litt. b*), and by delivery without endorsement if it is made out to bearer (Art. 4, §3, *litt* a UNCTAD/I.C.C. Rules; Rule 3 *litt.*c). The UNCTAD/I.C.C. Rules even provide for the issue of a named document with an order clause (Art. 4, §3,*litt.*c UNCTAD,/I.C.C. Rules). The document legitimates its holder: delivery of the goods may only be demanded from the multimodal transport operator against surrender of the document (Art. 4, §3, *litt.* a-c,/I.C.C. Rules; Rule 3 *litt.* f, 1975 I.C.C. Rules). The 1975 I.C.C. Rules contained an express provision for cases where the document was issued in a set of more than one original, discharging the multimodal transport operator upon delivery of the goods in good faith against one of such originals (Rule 3, *litt.* g, 1975 I.C.C. Rules).

This provision has disappeared in the new version, but the solution is, it is submitted, still the same, which comes implicitly from the fact that the operator is discharged upon delivery to a person surrendering *one* original (Art. 4, §3, *litt.* a-c,UNCTAD/I.C.C. Rules). The literal character

of the document, protecting third party holders (Art. 3 UNCTAD/I.C.D.. Rules; rule 9 1975 I.C.C. Rules), poses no problem in the continental law systems. Whether it can actually overrule the document's status as "transferable" and not really "negotiable" at common law, would appear doubtful, but it is submitted that the operator's undertaking in the document not to prove against its contents may create an estoppel. As the Rules only have the force of contract and not of law, the mere fact of their incorporation will not of itself confer upon the multimodal transport document the characteristics of a document of title at common law, but it may be evidence (if sufficiently widespread) of a custom having that effect. In German law, too, such a document cannot always be a document of title.

International conventions:

Carriage by sea	Hague Rules 1924 Hague Visby Rules 1968 Hamburg Rules 1978
Carriage by air	Warsaw System (i.e. 1929, 1955, 1961)
Carriage by road	C.M.R. 1956 (Europe)
Carriage by rail	C.O.T.I.F. (C.I.M./C.I.V.) 1980 (Europe)
Inland waterways	-
Terminal operators	O.T.T. 1991 (not in force)

Regulation of multimodal transport

- Uniform rules for a multimodal transport document:
Model rules based upon network system for voluntary incorporation into multimodal transport contracts, drafted by I.C.C. In use since 1973 and changed in 1975.
- U.N. Convention on International Multimodal Transport of Goods Drafted by UNCTAD. Mandatory rules for multimodal transport based upon uniform liability system. Drafted in 1980, not yet in force.
- UNCTAD/I.C.C. Rules for Multimodal Transport Documents
Model rules based upon the Multimodal Convention, for voluntary incorporation into multimodal transport contracts, drafted by UNCTAD and I.C.C. in use since 1 January 1992.

Concerning limitation Mrs. Lise Skovby from the University of Copenhagen informed that in relation to sea transport you would only have the value of the goods. She remembered of the London and the Brussels conventions. The bill of lading will always be negotiable. Furthermore, that the definition of bill of lading and multimodal is of importance to negotiability of the bill of lading. In this respect the national laws will be the source.

She informed that in the old German law you will have the right to choose the regime if you cannot determine the place where the cargo was damaged.

In the circular indemnity clause, the responsible person does not refuse liability, but he repeats this liability to the agent and this one again to the user.

Concerning “supply chains”: Rationalisation of the due processes some of those things, which are transnational. In European terms support is needed. It was recommended Dr. de Wit to suggest to CEN what issues are to be standardized.

Dr. de Wit answered that the experiments with electronic data interchange were obstacles to the legal possibility to have a negotiable transport document which represents the goods.

Systems that duplicate will result in the fact that only the consignee may receive the goods; concerning the Bolero project, documents were the difficulties with the specific nature of the bill of lading has been overcome by electronic notes. A kind of a central register; an electronic documentation will be the way forward.

In relation to fares conditions they depend on different jurisdictions and the common law – problem of the non-physical operations – are different from country to country. You can imagine a complex of problems when you have the cargo insured over the borders.

De Wit concluded that the lawyer’s dream to the future is to have only one transport law in Europe, as with all the different national laws you never get the expected result.

It was commented that the Commission has recognized the importance of differences in national laws for the promotion of multimodal transport. Europe is in the process with economic issues and legal issues; stay of economics; and the use of insurance of the cargo within different liability regimes. It was questioned if it was possible by standardization to make changes to national laws? The answer for Europe is: if there is a Directive and the new approach standards are harmonised. In case of national laws and regulations they may as well refer to standards as valid parts of the national laws and regulations. Furthermore, if a contract refers to a standard it thereby is juridical part of the contract.

It was suggested that the paper of Dr. De Wit should be used as model for presentation of transport juridical problems in Europe and recommended the EU Commission to deal with this the biggest problem of the workshop.

Mr. Patrizio Grillo, DG7 informed that the most useful would be to go through the Commission and ask for taking the paper of Dr. de Wit in good account. He settled the workshop with a main conclusion for more dialogue between EC DG7 and CEN expressing his contempt with the two days presentations, discussions and decisions and with the hope to see all stakeholders again for the next CEN workshop on public passenger transport, to take place during Spring 2000.

Conclusion 7 (1999-12-14)

After a presentation of a large number of legal problems both in single modal and multimodal transport, the workshop concluded that the Commission is the most appropriate body to address this problem without undue delay.

Workshop consensus and conclusions

1) 1999-12-13 Workshop consensus on new CEN work items
Recognizing a European need for harmonization, the workshop proposes the following new work items to be discussed in the CEN system:

- Procurement methods for documentation of environmental performance of transport systems in transport chains.
- Food hygiene self-assessment control system (according to Directive 93/43/EEC on hygiene and foodstuffs).
- Transport of living animals

2) 1999-12-13 Workshop consensus on new CEN work items
Recognizing a European need for harmonization within freight transport in urban areas, the workshop recommends to consolidate all information in a city logistic forum, from all stakeholders and then consider the position, including evaluation of the needs for small loading units in the intermodal chain.

3) 1999-12-13 Workshop consensus on new CEN work items:
Recognizing the overlapping scopes of the CEN/TCs within the field of logistics and transportation, the workshop recommends the CEN Management Centre to start up an integration process, involving all concerned TCs.

4) 1999-12-13 Workshop consensus on new CEN work items: The workshop proposes to organize a forum for investigation of the future standardization requirements for freight transport service and logistics systems

5) 1999-12-14 Workshop consensus on new CEN work items
With due regard to COM (97) 243 Final advocating a systems approach to the development of freight transport, and in recognition of the integrated supply chains that are increasingly enabled through transparent IT systems, it is proposed that a forum/workshop is convened to establish just how a fully integrated domestic set of transport standards applicable to continental Europe (inc. short sea), based on intermodality and flexible modularity, may be developed that can be applied to fully utilize the capacity of freight corridors in all nation states. If a satisfactory level of infrastructure is going to be developed in time, it is of vital importance that EU Policy interest is informed of the regulation, harmonization and other instruments needed for this to be achieved.

6) 1999-12-14 Workshop consensus on new CEN work items
The workshop recommends to standardize an intermodal unit of European semi-trailer size, stackable and offering optimum internal space for European standard loads, to serve in future European international transport in addition to those units that are today already in service.

7) 1999-12-14 Workshop consensus on new CEN work items
The workshop notes the ongoing activity in the European action cost 339 on small containers and recommends considering standardization in this field based on the results of the “cost action”.

8) 1999-12-14 Workshop consensus on new CEN work items

The workshop notes the ongoing activity in the European research project on horizontal transfer and recommends to consider standardization in this field based on the results of this research project (IN.HO.TRA).

Conclusion 1 (1999-12-13) Recognizing a number of practical and legal problems identified through the workshop, it is recommended that the interested parties take part in and ensure the coherent ongoing standardization of freight transport IT.

Conclusion 2 (1999-12-13) Recognizing a number of practical and legal problems identified through the workshop, it is recommended that a new workshop is convened to discuss improving and the full integration, the full visibility of freight flow such that the freight can be managed more effectively.

Conclusion 3 (1999-12-14) The workshop identified the need for improved co-ordination of efforts in separate CEN/TCs on different aspects of intermodal transport systems, in order to obtain a coherent set op European Standards

Conclusion 4 (1999-12-14) The workshop recognizes the needs for information on performance on EU terminals and will consider establishing a code of best practice on the basis of ongoing projects.

Conclusion 5 (1999-12-14) The workshop concludes that there is a need for a closer dialogue between CEN and the Commission, in order to evaluate the merits for standardization within the Commission's work on infrastructure charging and notably the application of social marginal costs (infrastructure damage costs, congestion and scarcity costs, environmental costs and accident costs etc.).

Conclusion 6 (1999-12-14) The workshop notes that there are problems in manual handling, and concludes that many problems can be solved by using existing standardization.

Conclusion 7 (1999-12-14) After a presentation of a large number of legal problems both in single modal and multimodal transport, the workshop concluded that the Commission is the most appropriate body to address this problem without undue delay.

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