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INLAND TRANSPORT COMMITTEE



Seminar on the Impact of
Increasing Dimensions of
Loading Units on Combined Transport
(Geneva, 1-4 September 1992)

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REPORT OF THE SEMINAR ON THE IMPACT OF INCREASING
DIMENSIONS OF LOADING UNITS ON COMBINED TRANSPORT

(1-4 September 1992)

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REPORT

1. The Seminar on Increasing Dimensions of Loading Units on Combined Transport was held at Geneva from 1 to 4 September 1992 under the auspices of the United Nations Economic Commission for Europe (ECE) */.

ATTENDANCE

2. The Seminar was attended by representatives from the following ECE member countries: Austria; Belgium; Czech and Slovak Federal Republic; Denmark; Finland; France; Germany; Hungary; Ireland; Italy; Netherlands; Norway; Poland; Portugal; Romania; Russian Federation; Sweden; Switzerland; Turkey; Ukraine; United Kingdom; United States of America; Yugoslavia. The European Community (EC) was represented. Representatives of the following countries participated under the provisions of paragraph 11 of the terms of reference of the Economic Commission for Europe: Australia; Chile; Colombia; Egypt; India; Indonesia; Kuwait; Myanmar; Saudi Arabia; Thailand.

3. Representatives of the United Nations Conference on Trade and Development (UNCTAD), the Economic Commission for Africa (ECA) and the Economic and Social Commission for Western Asia (ESCWA) attended the session. Representatives of the following United Nations specialized agency and other intergovernmental organizations attended the session: International Labour Organisation (ILO); European Conference of Ministers of Transport (ECMT); Central Commission for the Navigation of the Rhine (CCNR).

4. The following non-governmental organizations were represented: International Organization for Standardization (ISO); International Union of Railways (UIC); International Chamber of Commerce (ICC); International Chamber of Shipping (ICS); International Road Federation (IRF); International Road Transport Union (IRU); International Cargo Handling Co-ordination Association (ICHCA); International Container Bureau (ICB); International Federation for Housing and Planning (FIHUAT); International Association of Ports and Harbours (IAPH); International Federation of Freight Forwarders Associations (FIATA); International Union for Inland Navigation (UINF).

5. At the invitation of the secretariat, the International Union of Combined Road-Rail Transport Companies (UIRR), the Union of Industries of the European Community (UNICE), Bell Lines, Sy-kon International Limited and Service Capricorne were represented.

*/ The term combined transport can be taken as a synonym for intermodal or multimodal transport in the context of the Seminar discussions.

OPENING OF THE SEMINAR

6. The Executive Secretary of the Economic Commission for Europe (ECE), Mr. G. Hinteregger, opening the Seminar stressed the importance the ECE attached to combined transport which was seen by many Governments as one of the possibilities to relieve at least some pressure from the increasingly overburdened road network. For this reason Governments were increasingly concerned about a proliferation of larger than standard containers which could often not be transported inland without conflicting with railway loading gauges, road traffic regulations and technical characteristics of inland waterways.

7. This explained the interest of Governments in questions linked to the standardization of a new series of freight containers. Mr. Hinteregger pointed out that this interest of Governments should however not be interpreted as if Governments wanted to prescribe in detail optimum dimensions of containers and other loading units used by the transport industry. It was the transport industry that was called upon to devise and produce loading units which best suited their requirements. However, given the responsibilities of Governments in the fields of land transport infrastructure, traffic safety and environmental protection, it was the duty of Governments to let the industry know about Governmental long-term planning in the fields of transport policy and transport infrastructure developments in order to enable the transport industry to make rational and sound long-term investment decisions, and to allow standardization organizations to prepare realistic and forward looking container standards.

8. The purpose of this second Geneva Seminar held under the auspices of the ECE was to consider the results of the studies undertaken world-wide on the economic and social consequences of the introduction of larger than existing ISO standard containers and to determine whether standardization at the global level of a new container generation, as discussed within ISO, would be justified on economic and social grounds or whether other possibly regional solutions would be preferable.

9. Mr. Hinteregger hoped that the conclusions of this Seminar which would constitute a consensus between both Government and industry representatives would be taken into account by all parties concerned to avoid a proliferation of oversized non-standard containers and to reduce the risk that Governments are tempted to strive for bilateral or multilateral Agreements on container dimensions.

10. The representative of UNCTAD recalled that his organization had supported the convening of the Seminar by the ECE and had assisted in promoting the largest possible participation by inviting its member countries to participate.

11. He pointed out that the importance of the Seminar was proved by the fact that its recommendations may mark the beginning of departure from such well familiar notions as twenty-foot-equivalent units (TEU) and its possible substitution by some new unit of measure in regard to container traffic.

12. The representative of UNCTAD said that as the Seminar had before it many reports representing different and sometimes contradictory points of view, all of them should be carefully considered in order to formulate a balanced recommendation. Without, however, prejudging any conclusion of the Seminar it should be kept in mind that larger-than-present containers raise many problems for transport operators and they cannot in general be accommodated by the existing transport systems, especially in developing countries.

ELECTION OF OFFICERS

13. Mr. W. van Zijst (Netherlands) was elected Chairman of the Seminar and Ms. S.-A. Charuthus (Thailand) was elected Vice-Chairman.

ADOPTION OF THE PROGRAMME

14. The Seminar adopted the programme of the Seminar prepared by the secretariat (TRANS/SEM.10/1; TRANS/SEM.10/2).

COMMERCIAL ASPECTS RELATED TO THE INTRODUCTION OF LARGER CONTAINERS: THE SHIPPERS PERSPECTIVE

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.3 (ISO); TRANS/SEM.10/R.8 (IICL); TRANS/SEM.10/R.18 (Sweden); TRANS/SEM.10/R.19 (IRU); TRANS/SEM.10/R.24 (Netherlands); Informal paper transmitted by UNICE.

15. The Seminar noted that the demand for larger than present ISO Series 1 containers and other loading units was very difficult to predict. Some participants regretted the absence of complete cost benefit analyses to demonstrate the advantages and disadvantages of a new series of container dimensions. Some studies had come to the conclusion that only 2 per cent of containerized cargo could possibly be captured by 49' long containers, as discussed within ISO, given their limited payload and the average weight of cargoes to be shipped. Observations made by the shipping industries seemed to support the conclusions that there is at the moment and will in the future very likely be little demand for such oversized container. This notwithstanding, it was observed that in the United States of America experience indicated that the demand for containers with greater capacity will continue to grow in certain trades.

16. On the other hand, road transport operators as well as the freight producing industry felt that the development of very large containers, such as the 49' unit, would be required to increase the efficiency of container transport and to meet the requirements of modern production and distribution concepts. The Seminar felt that market niches, for containers larger than ISO Series 1 containers could specifically be found in port-to-port traffic and for less-than-container loads.

17. Given the fact that transport and handling of very large containers would incur additional costs, the Seminar was of the view that the actual market share of very large containers would depend on the willingness of shippers to pay for the advantages offered by those boxes. Whether they would be prepared to do so, except in a few narrow market niches, remained to be seen.

18. There was a general consensus that in modern transport concepts, door-to-door transport of containers and other loading units was becoming increasingly important and that an easy interchangeability between maritime and inland transport modes was highly desirable.

19. The Seminar recognized that if large loading units, such as those discussed within ISO, were introduced, considerable restrictions for their inland transport would need to be imposed in many countries outside North America in view of the current and future transport infrastructure and road traffic regulations.

20. For efficient loading of internationally standardized unit load sizes compatible with packaging modules under all circumstances, the Seminar agreed that an internal width of 2.46 m to 2.48 m would be optimal for future containers from a stowage point of view. Neither the existing ISO series 1 containers nor the currently used European domestic containers or swap-bodies would offer such optimum loading conditions.

21. Several delegations felt that a container concept providing a length of 7.43 m (24' 4 1/2") and an internal width of up to 2.48 m might constitute a more efficient solution for a future container that would not only fulfil the loading requirements of shippers and inland transport operators, but would also allow inland transport in many countries of the world. Other delegations were of the view that the 24' 4 1/2" long unit would not meet adequate demand in some trading areas.

22. The Seminar noted that future containers, in line with industry demands and the requirements of the distribution and consumer industry, particularly in trade between and with industrialized countries, should allow for mechanized stuffing and stripping features.

23. The Seminar noted that irrespective of the actual size of future loading units, such as containers and swap-bodies, the greatest wish of shippers and transport operators was standardization of all loading units, independent of their actual and future size. It therefore felt that the harmonization of the global logistic chain, including transport infrastructure, should continue to be pursued by both, international standardization organizations and Governments responsible for transport infrastructure and traffic regulations. Developing countries felt, however, that this was particularly difficult to pursue in view of the costs involved.

TECHNICAL CONCEPTS AVAILABLE OR PROPOSED FOR LARGER CONTAINERS

Documentation: TRANS/SEM.10/R.2 (ISO); TRANS/SEM.10/R.4 (United States); Informal paper (Bell Lines).

24. In response to different market demands and in line with traffic regulations in various regions of the world, a number of technical concepts for larger loading units had been developed or were under preparation.

25. The Seminar was informed of the existence of the European domestic container and swap-body which had a growing success due to the fact that their dimensions allowed a good stowage of modular unit load sizes, were in line with European road traffic regulations (outer width of 2.5 m) and provided for an easy transfer not only between different road vehicles but also between road and rail. Swap-bodies alone, most of which had been standardized, accounted today for more than 50 per cent of all intermodal movements in Europe with a continuing tendency to grow.

26. The Seminar noted that in the United States of America domestic, mainly double-stack container traffic was gradually replacing combined transport of semi-trailers on railway wagons. While ISO Series 1 containers still made up the vast majority of boxes used, increasingly over the last few years, 48' and 53' long containers with a width of 8'6" were introduced. These containers which were not built to maritime specifications are ideally suited to high cube, light weight goods.

27. In Europe, cellular-compatible, pallet-wide containers had been developed and were used successfully mainly by one marine carrier in short sea traffic. These containers do not only offer suitable internal dimensions for modular unit load sizes, but are also fully compatible with standard ships' cell structures and could be treated in the same way as standard ISO Series 1 containers.

28. The Seminar was also informed in detail about the objectives and the concept underlying the recent ISO proposals on a new series of containers (ISO Series 2). It was pointed out that this new series of container standards, going considerably beyond the dimensions of the predominantly used ISO Series 1 containers, was not intended to replace the existing ISO Series 1 container generation. The intention of the ISO proposals was rather to bring about a halt to the uncontrolled proliferation of large non-standard containers and to offer an alternative for container operators which needed, for certain routes and cargoes, high volume containers. Therefore, the gross mass of these new containers was not intended to exceed that of ISO Series 1 containers. The proposals made within ISO also aimed at compatibility, as far as practical, with existing ISO Series 1 handling equipment, at modularity within the new series through the introduction of a half size unit (24'4 1/2" long) and at a high stowing efficiency for standardized packaging modules.

29. The Seminar was aware that all these technical solutions, provided answers to specific needs of the shippers and the transport industry under particular economic, social and legal environments. The Seminar shared the concern of ISO for a proliferation of non-standard containers and other loading units used in combined transport. It felt that the ISO proposals constituted a new and innovative industrial approach which might provide a starting point from which a new global container standard could be developed aiming at increased efficiency of transport operations while keeping adaptation costs at an acceptable level. In view of the ever-increasing importance of door-to-door transport operations such new global containers standards should however also take into account the requirements of maritime and land transport operations as well as the nature of the majority of cargoes to be shipped.

CONSEQUENCES FOR THE ORGANIZATION OF THE TRANSPORT CHAIN DUE TO THE INTRODUCTION OF LARGER CONTAINERS

(a) Impact of larger containers for maritime transport

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.5 (ICHCA); TRANS/SEM.10/R.6 (ICHCA); TRANS/SEM.10/R.11 and Add.1 (ECMT); TRANS/SEM.10/R.17 (ICS); TRANS/SEM.10/R.22 (United Kingdom); informal paper by Norway.

30. The Seminar noted that any addition to the ISO series 1 containers would have considerable repercussions for vessel operators. This held particularly true for modifications in the horizontal dimensions. The costs involved as well as the pure possibility of adapting existing cellular container vessels to new container dimensions depended on the construction of vessels in operation. Generally it had to be stated that the smaller the vessel the greater the loss of slot capacity in relation to the former capacity would be.

31. Given the current overcapacity of container vessel slots, even a very gradual introduction of ISO series 2 containers would lead to considerable economic losses for the maritime container operators, as no increase in revenue was expected as a result of carrying larger containers.

32. While some maritime container operators seemed to see a market niche for larger and special containers in captive, closed loop trades, the Seminar noted that the majority of shipping lines did not see a need nor a demand from customers for a new container standard.

33. Taking into account the concerns of the majority of maritime container operators, the Seminar considered whether an international agreement among all parties concerned defining dimensions and other technical characteristics of future containers, including a timetable for its introduction in every region of the world, should be envisaged. The Seminar felt that any recommendation on the adoption of such an international agreement would be premature given the current ongoing discussions on future container dimensions in many international governmental and non-governmental fora.

(b) Impact of larger containers for ports and inland container handling

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.6 (ICHCA); TRANS/SEM.10/R.12 (ECMT); TRANS/SEM.10/R.22 (United Kingdom); TRANS/SEM.10/R.23 and Add.1 (UN/ESCAP); Informal papers by Indonesia; UN/ESCWA; IAPH.

34. The problems for ports and inland container terminals in handling larger containers are likely to be those of increased cost and reduced efficiency. A particular problem seemed to be an increase in length and width of containers. The width between the legs of gantry cranes was usually not sufficient to allow the longitudinal passing of 49' containers. Any adaptation of such cranes did not seem to be economical.

35. The Seminar took note that a proliferation of container sizes would considerably complicate storage and stack planning of containers in ports and container terminals and would almost certainly require additional storage space or lead to reduced capacity.

36. The Seminar felt that from a strictly commercial point of view, port and container terminal operators were not opposed to attracting traffic of non-standard containers, provided the considerable surcharge over the standard rate for handling non-standard containers (estimated handling time by a leading European port: 3 times longer) would be borne by the customer. It was also felt that handling requirements of non-standard containers should be compatible with handling requirements of ISO Series 1 containers.

37. Given the considerable adaptation costs for ports to handle oversized containers, the Seminar recognized the particular difficulties of developing countries which often had just started to reap the benefits of large scale investments in container port facilities dedicated to ISO Series 1 containers made in recent years.

(c) Impact of larger containers on railway transport

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.5 (ICHCA); TRANS/SEM.10/R.6 (ICHCA); TRANS/SEM.10/R.9 (UN/ECA); TRANS/SEM.10/R.13 (Poland); TRANS/SEM.10/R.14 (Austria); TRANS/SEM.10/R.21 (UIC); TRANS/SEM.10/R.22 (United Kingdom); TRANS/SEM.10/R.23 and Add.1 (UN/ESCAP); TRANS/SEM.10/R.25 (Russian Federation); TRANS/SEM.10/R.26 (France); TRANS/SEM.10/R.27 (Germany); informal papers by Czech and Slovak Federal Republic; Italy; Norway.

38. The Seminar noted that railways in Africa, Asia and Europe had to operate under relatively restricted loading gauges compared to North America where double-stack container trains were not only operating on an east-west direction, but increasingly also on north-south corridors.

39. Electric wiring, tunnel and bridge profiles as well as curve radii made the transport of larger containers in these countries difficult. In particular a combination of increases in width and height of new larger containers would generate restrictions. The adaptation of rail infrastructure could only be possible over very long periods and for selected transport corridors and would often entail substantial investments of which, at least today, the profitability has not been proved.

40. It was noted that in certain countries the operation of specially designed low platform wagons could considerably reduce these problems, but at high investment, operating and maintenance costs. The introduction of large containers, such as the proposed ISO series 2 containers, would also, for a considerable transition period, reduce the optimum use of rail container wagons built to the specifications of ISO series 1 containers, allowing only up to 60 per cent of the existing wagon length to be used.

41. The Seminar noted that while railways would be prepared to transport, under certain technical and commercial conditions, larger containers, the additional costs for such operations might be reflected in higher tariffs which might defeat the objectives of many Governments to foster the rail transport of containers.

(d) Impact of larger containers on road transport

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.4 (USA); TRANS/SEM.10/R.5 (ICHCA); TRANS/SEM.10/R.6 (ICHCA); TRANS/SEM.10/R.9 (UN/ECA); TRANS/SEM.10/R.13 (Poland); TRANS/SEM.10/R.14 (Austria); TRANS/SEM.10/R.16 (Italy); TRANS/SEM.10/R.19 (IRU); TRANS/SEM.10/R.22 (United Kingdom); TRANS/SEM.10/R.23 and Add.1 (UN/ESCAP); TRANS/SEM.10/R.25 (Russian Federation); TRANS/SEM.10/R.27 (Germany); Informal papers by Australia; Czech and Slovak Federal Republic; Norway.

42. The Seminar recognized that in virtually any intermodal door-to-door transport chain road transport formed an indispensable part, either for initial or terminal haulage. In the majority of Asian, African and European countries the maximum permissible width of road vehicles was limited to 2.5 m. Exceptions were made in some European countries for vehicles with insulated load compartments (max. 2.6 m). However, given the actual plus tolerances in the dimensions allowed for these vehicles in certain countries, actual vehicle width in these countries was in practice somewhere between 2.5 m and 2.55 m.

43. The Seminar noted that a few other European countries as well as some countries in Africa and North America allowed a permissible maximum width for all road vehicles of up to 2.6 m.

44. The Seminar noted that height was mostly restricted to 4.00 m and the maximum loading length of road vehicles did not extend in many countries beyond 13.60 m. On the other hand the United States of America allowed unlimited overall length for either twin or single-trailer combinations on all federally designated roads and access roads.

45. The introduction of larger containers, such as the proposed ISO Series 2, would thus conflict with road traffic legislation in many countries in the world. Even in case of special permits being issued for their transport on an exceptional basis, the road transport of such loading units would require costly special low chassis and articulated state-of-the-art vehicles in order to overcome limited bridge clearances and prescribed turning circles.

46. While transport operators seemed in general to accept the possibilities of enlarged cargo space offered by larger containers, the Seminar felt that possible problems of overloaded road vehicles operating in combined transport services could be further aggravated given the increased loading length and the average density of cargoes shipped. Overloaded road vehicles and excessive axle loads were of particular concern to developing countries.

47. The Seminar was aware that the length of the half size unit discussed within ISO (24'4 1/2") would fall within the length permitted for European swap-body length and could thus provide a basis for an easily interchangeable loading unit in a European context provided that a width of 2.5' was not exceeded. Developing countries however mentioned that this half size unit would be economically unacceptable for road transport, as most of the vehicles are capable of carrying 20' units only. The same held true for rail transport as rolling stock was designed to carry 20' and 40' units.

48. In addition to its impact on road safety, the Seminar felt that any considerable increase of maximum permissible dimensions of road vehicles would not only entail enormous investments, but would also at the moment not be acceptable by the public at large in many countries.

(e) Impact of larger containers on inland water transport

Documentation: TRANS/SEM.10/R.1 (COST 315); TRANS/SEM.10/R.15 (UINF); TRANS/SEM.10/R.27 (Germany); TRANS/SEM.10/R.9 (UN/ECA).

49. The Seminar was aware that the transport of containers and other loading units by inland navigation vessels was significant in certain countries and that in Europe the large majority of such traffic was taking place on the River Rhine. Given the still untapped capacity of inland navigation, enlargement of container transport by inland navigation is planned also on other rivers and canals.

50. The Seminar noted that in Europe, apart from the Rhine from Strasbourg to the sea where no severe infrastructure constraints hampered inland water transport, other rivers and canals as well as the upper part of the Rhine might impose height and width restrictions due to the limited size of locks and restrictive bridge clearances. Given these restrictions, containers whose width exceeded 2.5 m could most probably not be transported efficiently in four rows in the hold of most existing and newly to be constructed inland navigation vessels which were able to navigate on inland waterways outside the river Rhine. In the view of some experts appropriate adaptations of vessels to hold four rows of 2.55 m wide containers would seem to be possible, however at very considerable costs.

51. The Seminar was informed that some inland waterways in Africa had a potential for inland waterways, but could not be tapped because of infrastructure limitations and bottlenecks in the feeder transport systems.

PRESENT AND FUTURE GOVERNMENT POLICIES CONCERNING MAXIMUM DIMENSIONS OF CONTAINERS AND OTHER RELATED TRANSPORT EQUIPMENT

Documentation: TRANS/SEM.10/R.7 (UNCTAD); TRANS/SEM.10/R.10 (UN/ECE); TRANS/SEM.10/R.14 (Austria); TRANS/SEM.10/R.20 (ECMT); TRANS/SEM.10/R.23 and Add.1 (UN/ESCAP).

52. The Seminar noted that since 1989, when the first ECE Seminar took place, Governmental policies towards combined transport and dimensional requirements of loading units had not changed fundamentally. Governments were however increasingly concerned about the trend towards larger containers and other loading units used in combined transport. This concern stemmed from the fact that, contrary to the 1960s when ISO series 1 containers were standardized, door-to-door intermodal transport was increasingly replacing port-to-port container transport operations. Furthermore, the ISO proposals towards the standardization of a new series of containers went considerably beyond the dimensions of currently permissible dimensions in road traffic and beyond the possibilities offered by inland transport infrastructure in many countries, particularly in Africa, Asia, Australasia and Europe.

53. Given the responsibilities of Governments in the fields of land transport infrastructure, traffic safety, social development and environmental protection, the Seminar felt that Governments should inform the industry and transport operators about Governmental long-term planning in the field of transport policy and transport infrastructure developments. Only then, if these necessary framework conditions affecting the dimensions of containers on the inland transport leg were determined, could the transport industry and operators make rational and sound long-term investment decisions and could standardization organizations prepare realistic and forward-looking container standards.

54. The Seminar considered the ISO technical document on a new series of freight containers, and noted with regret that in spite of a large number of Seminar contributions providing detailed information on the costs which would result from the possible introduction of such larger containers, very little information about the demand for and the economic benefits of such future containers was provided by the transport industry.

55. Given this situation the large majority of participants representing Governments at the Seminar were not in a position to support the ISO proposals towards standardization of ISO series 2 containers. In fact many Government participants, including those of the European Community and its Member States, pointed out that the full-size (49') containers proposed by the ISO had major implications for the transport infrastructure. It was pointed out that if such containers were unloaded from ships in ports of the EEC, their transport within the EEC would not be allowed under EC Directives or Regulations or on a regular basis by the use of special permits. Many participants, including those representing Governments members of the EEC expressed the view that the half-size unit container (24' 4 1/2") could be acceptable with regard to length, but that this half-size container, as discussed by ISO, would not be acceptable for its width. Other participants noted that in certain trades, the demand for the half-size unit might be minimal.

56. The majority of Seminar participants from developing countries also pointed out that ISO Series 2 containers would not be allowed to be transported in their territories.

57. Recognizing the increasing and uncontrolled proliferation of non-standard containers as a threat to the efficient functioning of combined transport services, the participants in the Seminar adopted a resolution which intended to provide guidance to Governments and to the transport industry and to standardization organizations about the policy objectives of Governments in the field of combined transport. This resolution also established upper limits for maximum acceptable dimensions for loading units that could, in the foreseeable future, be transported inland without conflicting with transport legislation and infrastructure requirements.

58. The Seminar recommended that ISO, taking into account the deliberations of the Seminar and the resolution adopted, might wish to reappraise its documents describing a new series of freight containers in order to arrive at container standards which would be globally acceptable and be in line with the large majority of parties involved in the total transport chain.

ADOPTION OF THE REPORT

59. The Seminar adopted this report and the annex thereto at its closing session.

Annex

RESOLUTION

adopted by the

**UN/ECE Seminar on the Impact of Increasing Dimensions of
Loading Units on Combined Transport ^{*/}**

(on 4 September 1992 at Geneva)

Participants in the Seminar,

Bearing in mind the results of the 1989 Geneva Seminar on dimensions of loading units (containers, swap-bodies, etc.),

Considering that the increasing volumes of inland goods transport can only be handled in the future, if optimum use is made of the transport infrastructure including all modes of transport,

Underlining the important role of combined transport^{**/} to allow an efficient and effective utilization of the individual modes with a view to mitigating the external effects of transport and to bring transport chains in line with modern market requirements,

Taking note of the concern expressed in many transport circles and by many Governments about the impact of increasing dimensions of loading units on the organization of the combined transport chain and on transport infrastructure,

^{*/} The Seminar was convened under the auspices of the United Nations Economic Commission for Europe (ECE) with the assistance of the UNCTAD secretariat and assembled more than 120 experts from Governments and the transport industry of Africa, Asia, Australasia, Europe and North America.

^{**/} The term combined transport can be taken as a synonym for intermodal or multimodal transport in the context of the Seminar discussions.

Aware that global standardization of all dimensional components of loading units used in combined transport would considerably enhance transport productivity,

Recognizing that for certain trades, constituting at present a small proportion of total international trade, the dimensions of existing ISO series 1 containers do not constitute an optimum solution, consistent with integrated production/transportation logistics,

Being aware that the uncontrolled proliferation of non-standard loading units should be avoided,

Taking note of the considerations within ISO/TC104 towards a new series of containers (ISO Series 2 freight containers) which represent a new and innovative industrial approach and may provide a starting point from which a possible new global container standard could be developed aiming at increased efficiency of transport operations while keeping adaptation costs at an acceptable level,

Welcoming the proposal of the ISO not to increase the maximum gross weight of future containers beyond the maximum allowed for existing 40' containers,

Take note that, in view of increasing door-to-door transport operations, replacing traditional port-to-port traffic, world-wide acceptance of a new series of containers would be facilitated if future container standards were in line with foreseeable national traffic legislation and inland infrastructure requirements,

Taking into account that many operators of maritime transport would face severe problems, particularly with regard to cellular ships and port equipment, if width and length of containers other than ISO series 1 would have to be handled,

Taking also into account the concerns of inland water and rail transport operators which would face considerable problems if dimensions other than those of existing ISO series 1 containers would need to be handled,

Welcoming the large number of contributions presented at the Seminar which had been prepared world-wide by Governments and international organizations as a follow-up to the first 1989 Geneva Seminar,

Taking into account the proceedings of the Seminar contained in its report (ECE document TRANS/SEM.10/4),

1. Consider that a long-term scheme for the development of inner and outer dimensions of loading units used in combined transport must be both realistic and forward-looking, i.e. take into account:

- (a) the present considerable investments made in combined transport equipment and infrastructure;
- (b) the emerging general trade needs and technological developments;
- (c) the growing sensitivity of the public opinion about the impact of increasing traffic and about the environment;

2. Recommend that existing ISO series 1 containers which particularly in most developing countries had been the basis for recent large scale investment in infrastructure, rolling stock and handling equipment, should continue to be the main container standard which should be improved in line with emerging market requirements;

3. Stress that any standardization of loading units must be forward looking to allow Governments and industry the opportunity for adequate planning to accommodate near and distant future commercial and technological development;

4. Underline that inland transport infrastructure, having a long service life and being difficult to change, must be taken into account as a major factor in standardization considerations;

5. Underline also that the harmonization of design criteria for all transport systems, particularly for transport infrastructure, must be pursued and achieved, at least for major routes as far as is practicable;

6. Recommend that the following principles should guide Governments and international organizations concerned in their approach towards acceptance and standardization of new dimensions of loading units which would be acceptable to shippers and the transport industry world-wide as well as to Governments responsible for inland transport infrastructure:

- (a) external dimensions of maritime and inland loading units should be compatible, so far as possible, with each other and in line with future inland transport regulations in order to ensure an economic use of transport equipment in inland transport;
- (b) external dimensions of loading units should, so far as possible, be compatible with foreseeable inland transport infrastructure for all major transport corridors;
- (c) taking into account paragraph (b) above, internal dimensions of maritime and inland loading units should be based, so far as possible, on the internationally standardized packaging module and unit load sizes;

- (d) the intermodality of all loading units should be ensured for the total transport chain in order to allow easy transshipment between all modes of transport;
- (e) dimensional standardization criteria for application on a global level should be based on the requirements of a considerable proportion of cargoes transported and should not respond to specific trade needs only;
- (f) loading units should allow mechanized stuffing and stripping procedures as modern production and distribution systems will increasingly require such features;
- (g) new standards for loading units should be compatible, as much as possible, with existing standards and should be maintained over long periods of time so as not to jeopardize investments made in transport infrastructure, rolling stock, vessels and handling equipment;

7. Invite the transport industry and international standardization organizations to take into account as important guidelines the following transport policy and infrastructure developments as well as operational requirements in their designing and standardizing of dimensions of loading units to be used on a global level:

(a) Width:

As a general rule, most countries in Africa, Asia and Europe allow for road transport a maximum width of 2.50 m, for infrastructure and safety reasons. In Europe exceptions exist for temperature controlled vehicles given their marginal use;

An outer width for road vehicles of 2.60 m is allowed in some European and North American countries;

For the optimum stuffing and stripping of internationally standardized packaging modules and unit load sizes in all circumstances, ample internal width is required. For technical reasons this would lead to an outer width of more than 2.50 m. Many experts argue that, from a stowing point of view, an outer width of more than 2.55 m would not be necessary;

(b) Height:

Loading units with a height of up to 2.60 m do not create problems in inland transport. A height of 2.90 m (9'6") poses difficulties for inland transport in a number of countries, particularly if such height is coupled with a width of more than 2.5 m;

(c) Length:

While in North America the transport of 45', 48', 49' or 53' long containers would be possible, the transport of such loading units is not allowed on a regular basis on roads in Africa, Asia and Europe. Since the transport of such loading units would also create difficulties for the other inland modes in many countries, their use would be restricted or not permitted;

8. Conclude that for the foreseeable future the regular inland transport of loading units (containers, swap-bodies, etc.) with a length of 49' (14.90 m) and a width of 8'6" (2.60 m) would be virtually excluded in most countries in Africa, Asia, Europe and Australasia. Equally the 24'6" (7.43 m) half-size container proposed by the ISO would not be acceptable because of its width. It was also felt by some countries that the acceptance of the half-size container would open the door for the 49' long unit for reasons of modularity;

9. Regret the lack of comprehensive cost-benefit studies to justify the demand for, and the economic viability of, the proposed new ISO series 2 standard containers;

10. Feel that the following considerations should also be borne in mind with respect to operations in certain countries:

A container module with a length of 7.43 m (24'6"), a width of 2.50 m and a height of 2.60 m would, from a technical and legal standpoint, be acceptable for inland transport in many countries. While some countries felt that such loading units would be commercially attractive, for a large number of other countries such dimensions would be neither economic nor viable. Increases, particularly in width and height, beyond these dimensions would lead to an increase in difficulties for the handling and transport of such loading units. A world-wide use of loading units with dimensions beyond 2.55 m in width and 2.90 m in height would not seem to be possible;

11. Invite the UN/ECE Inland Transport Committee to endorse the report of the Seminar with the request that this resolution as well as the report of the Seminar be brought to the attention of all ECE member countries as well as to all competent international organizations. The UNCTAD secretariat was invited to inform all UNCTAD member countries likewise.
