



Bureau International des Containers et du Transport Intermodal

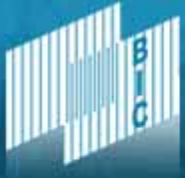
Global Rail Freight Conference, Saint Petersburg, 6-7 July 2010

Michel Hennemand President of BIC

***Greater Ships and heavier loads:
Safety needs for future container traffic***



Photo : Hapag Lloyd



Greater Ships and heavier loads: Safety needs for future container traffic

Under the last 15 years, independently of ships capacity which are now far over 10 000 TEU, major design container parameters have been changed. Some of them could have major impact on safety.

Design and calculation method

Steel and materials used

Maintenance and repairs

Average gross mass and lifting equipments

New cargo

Conclusion

Solutions are going through the evolution of the Standards.



Greater Ships and heavier loads: Safety needs for future container traffic

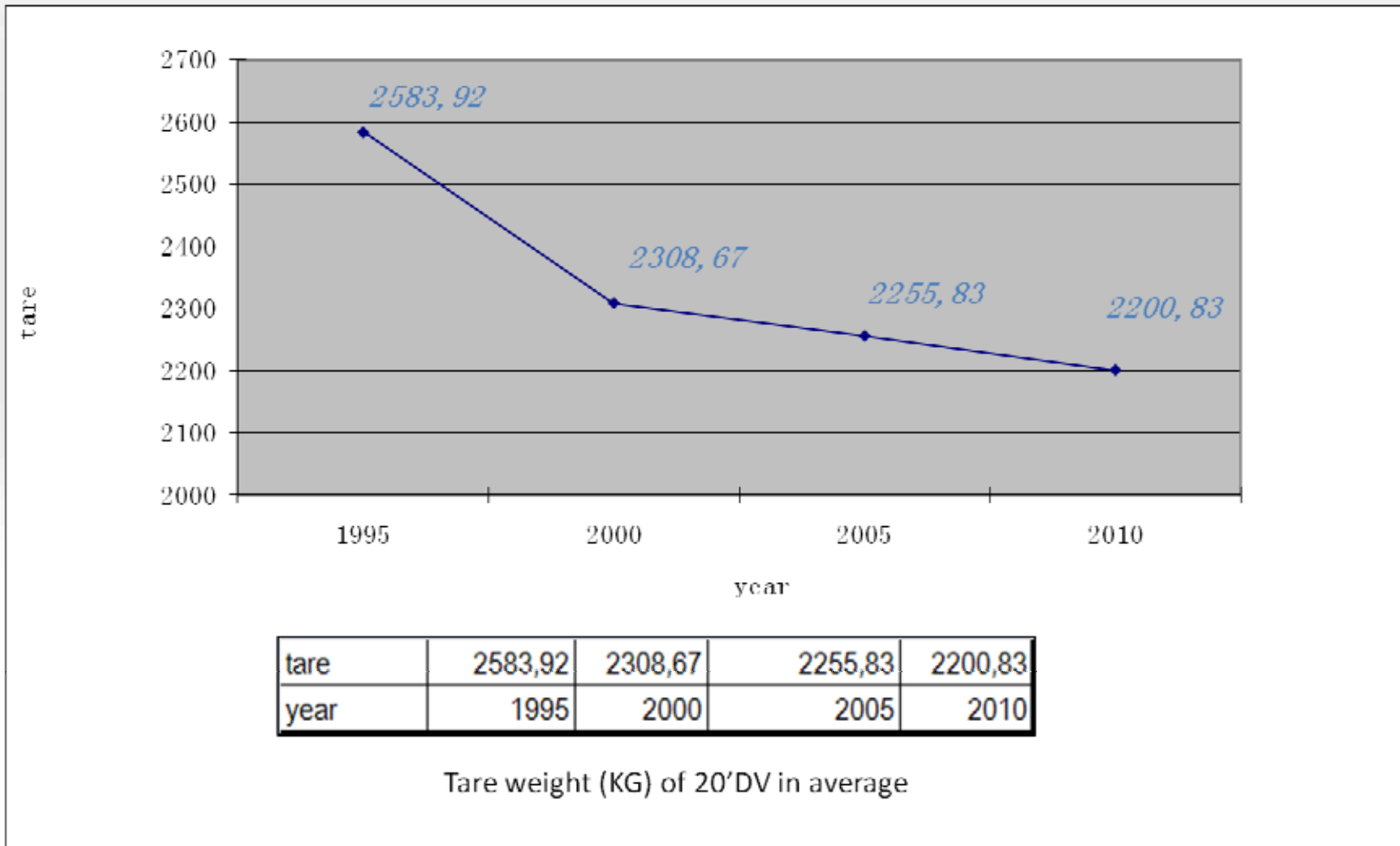
Container design calculation

Use of new sophisticated software/calculation methods allowing the use of less quantity of steel consequently the average tare mass is going to decrease.





Tare weight evolution under last 15 years (20 DU steel container)



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Steel and material used


During the last COA (Container Owner Association) seminar held in Shanghai last month, one of the main items which were proposed for adoption was to reduce weight of container through use of high strength steels and composite materials with the following major consequences:



- Quality of management of in service containers through depots and repair shops (everybody knows that it is far more difficult to weld such kind of steel)
- Similar problems will occur with floor made of composite material

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In service inspection and maintenance

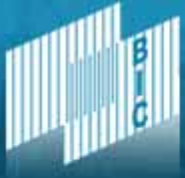
- In service inspection (criteria of acceptability) 
- Maintenance is one of the parameter which have an heavy influence on safety
- Low container prices + crisis → lead to poor maintenance (container could become a commodity)

exemple : Corner Castings



- Lack of regulations ; need to be revised :
 - **the CSC= Convention for Safe Containers**
 - **ACEP = Approved Continuous Examination Program**

« Administrations should periodically evaluate, by audites or other equivalent means, that the provisions of the approved programmes are being fully followed. Such evaluation should occur as determined by the administration, but at least once every five years »



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Average Container gross mass and lifting equipments

- It should be noted that Max Gross Mass of a 20 ft DV container move from 24 000 kg (1980) to 30 480 kg or more (sometime up to 36 000 kg)

- Lack of accuracy (report on the investigation of the structural failure of MSC Napoli)
 - ➔ Shippers deliberately under-declaring containers weight in order to minimise import taxes calculated on cargo weight. This allow the over-loading of containers and keep declared weight within limits imposed by road and rail transportation

 - ➔ Container shipping is the only sector of the industry in which the weight of the cargo is not known. If the stresses acting on container ships are to be accurately controlled, it is essential that containers are weighed before being loaded on ships.



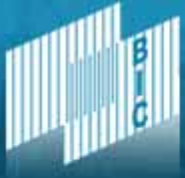
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Lifting equipments

Evolution of container cranes , container ships

Particular	Container Crane	Container Crane
Capacity	Super Duty (Maximum Net Weight) 40 000 kg (88 000 lbs) 40 000 kg (88 000 lbs)	40 000 kg (88 000 lbs) (max) 40 000 kg (88 000 lbs) (max) Lifting height 40 m (131 ft) Lifting height 40 m (131 ft) (max) Lifting height 40 m (131 ft) (max)
Power & Motor	Single motor or dual 400V 3-phase Frequency 50 Hz 400V 3-phase (max) 400V 3-phase (max) 400V 3-phase (max)	Single motor or dual 400V 3-phase Frequency 50 Hz 400V 3-phase (max) 400V 3-phase (max) 400V 3-phase (max)

- All sizes and dimensions, speed, acceleration has been increased
 - Lifting capacities: new tandem, lift cranes :2X20 /2x40/2x45 or 4x20
- All these handling improvements are in favour of Container Trade but the box itself is more and more solicited.



Greater Ships and heavier loads: Safety needs for future container traffic

New products/ New Containers carried

New cargo

- Everybody knows problems that shipping lines are facing with bulk cargos such as marble blocks or steel coils, badly secured. Flexitank is also becoming a cargo which may affect the life duration of container and the safety (500 00 movements annuary by 2014). Standard on this specific subject is becoming urgent.



- The industry (shipping line) have developed a « code of good practice who should theoretically allow the safe use of these equipments ». In fact, this is not correct, the standard DV container has never been designed for this use and only an ISO standard will allow a clear definition of :
 - Load to be considered (including dynamic)
 - Acceptability criterias



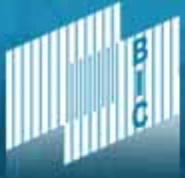
New containers (Swap bodies)

Shipping lines are accepting to load non ISO type Container (swap bodies, domestic container, etc...) with restricted stacking and racking capacities!

If this kind of equipments are not clearly marked and identified, we are going to face major problem in the future as met by the ship 'Annabela' a couple of years ago.



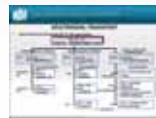
Once more, it appears urgent to develop a New Iso Container standard regarding marking of container capacity (type code) which will allow the shipplanner to load the container on ship in accordance with their mechanical performance.



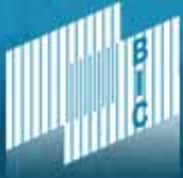
Conclusion

We try to demonstrate that this fantastic piece of equipment which is the container is used in a more and more efficient way. All parameters are converging to a point where the ISO containers could face problems that they never met before, and damage this image of safe transport equipment which is attached to the container since its birth.

We have in place an ISO TC 104 organization well set up and managed, perfectly able to provide the correct answer to the Transport Industry as long as there is a demand for it.



We think it is time now to reconsider some of the container ISO standard which make the success of containerization.



Thank you!



For your attention