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Group of Experts for the revision of the IMO/ILO/UNECE Guidelines for Packing of Cargo Transport Units

Second session
Geneva, 19-20 April 2012
Item 3 of the provisional agenda
Updates on the 1st draft of the Code of Practice (COP)

Comments (Bremen Port Authority) submitted on the Code of Practice for packing of Cargo Transport Units (CTU Code)

Note by the Secretariat

1. Per the Secretariat request on 21 March, 2012 to the Group of Expert on submitting comments and suggestions on the circulated draft COP in advance to the second session of the Group of Experts (19-20 April, 2012), the Group of Experts may wish to consider the proposal from the Bremen Port Authority reproduced below, and decide as appropriate.

Code of Practice for packing of cargo Transport units (CTU Code)

Comment to informal documents No 4 and No 6
Proposal for chapter 2 of the CTU Code

1 The structure of the CTU Code

The correspondence group discussed a draft outline of the Code consisting of various chapters and sections. There was no final consensus on this structure. So obviously the first draft of the Code, as presented in informal document No. 3 is not in line with the result of the discussion in the correspondence group.

Germany is not in favour to segregate the Code in an “introduction section” and a “main section”. This could imply that the provisions in the introduction section are less important, which in fact cannot be the case, as CTU properties and general transport conditions are crucial elements to evaluate the suitability and efficacy of a certain packing operation.

In order to have a clear understanding on chapters, sections and paragraphs, Germany proposes to use the following wording in the structure:

- one digit:	chapter:	e.g. chapter 10
- two digits:	section:	e.g. section 10.1
- three digits:	subsection:	e.g. subsection 10.1.1
- four digits:	paragraph:	e.g. paragraph 10.1.1.1
- five digits:	subparagraph	e.g. subparagraph 10.1.1.1.1.

The Group of Experts is invited to consider this proposed wording.

2 The proposed chapter 2 (or 3 in informal documents No. 3 and 6)

The title of chapter 2 as discussed in the correspondence group (or chapter 3 in informal documents No. 3 and 6) was envisaged to be “consequences of badly packed and secured cargo”. Germany is of the opinion that not only badly packed cargo has to be addressed here. As well, overloading of CTU, use of unsuitable CTU and improper documentation should be considered in this chapter.

Furthermore, Germany is in favour to provide here only a short introduction to the consequences of improper packing procedures. The responsibilities of involved parties should be dealt with in chapter 6 (chain of responsibilities). Any provisions, how such bad packing could be avoided, should be dealt with in the appropriate chapters: e.g. chapter 8 for the suitability of CTU, chapter 9 for checks, chapter 10 for packing and securing, chapter 12 for documentation and chapter 17 for the training of personnel.

Chapter 2 should not anticipate what is described in detail within subsequent chapters. Therefore, the contents of chapter 2 could be limited to a short description of the essential consequences of improper packing operations. A proposal for such description is attached as annex to this document.

The Group of Experts is invited to consider this approach and, in particular, to consider the proposed chapter 2 in the annex.

Annex Proposal of Germany for chapter 2 of CoP

2 CONSEQUENCES OF NEGLIGENT OR IMPROPER PACKING PROCEDURES

2.1 Consequences of badly packed and secured cargo

2.1.1 Cargo which has not been properly packed and sufficiently secured in a cargo transport unit may move inside the unit when it is exposed to acceleration, e.g. by hard braking of a vehicle on the road or by heavy ship motions at sea. Moving cargo may generate damage to the cargo itself, to other cargo or to the cargo transport unit. In particular heavy cargo items may develop inertia forces under such traffic accelerations, which may let them break through the CTU boundaries, menacing persons and property of third parties.

Figure 2.1: Hard braking with lack of longitudinal securing

2.1.2 Damage to the cargo is always an economic loss. Additionally, in case of dangerous goods, any damage to a receptacle may impair its containment capability and cause spillage of the contents, thus endangering persons and affecting the safety of the transport vehicle or ship.

Figure 2.2: Lack of securing at door end (left), on railway wagon (right)

2.1.3 Spilled cargo may also endanger the environment. This is soil and/or water contamination in case of road or rail transport and marine pollution in case of sea transport.

Figure 2.3: Liquid spillage, absorbents applied (left), solid spillage (right)

2.2 Consequences of insufficient control of humidity

2.2.1 CTUs present a closed box with a specific micro climate. During a long distance transport the humidity contained in the goods and in the packing material including dunnage may condensate on the inner boundaries of the CTU or on the cargo or even within the cargo. If sensible goods are packed carelessly into such a closed CTU, mainly box containers for sea transport, metal parts, if not properly protected, may corrode, clean surfaces may be stained and organic materials may suffer from mould or rot or other degradation.

Figure 2.4: Mould damage (left), condensation within plastic sheathing (right)

2.2.2 In particular hygroscopic cargoes have a variable water content. In ambient air of high relative humidity, they absorb water vapour, while in ambient air of low relative humidity, they release water vapour. If packed into a container in a climate of high relative humidity they would bring a considerable amount of water into the container, providing for an internal high relative humidity. This water may be released from the goods during temperature changes and may condensate with the above mentioned consequences. If this threat has not been averted by pre-drying the cargo to a so-called "container-dry" state, the high water content may result in mould, rot and biochemical changes. For some products, these phenomena are also associated with self-heating, which may go as far as spontaneous combustion, for example with oil seeds, oil seed expellers and fish meal. Extensive information may be found under www.containerhandbook.de.

2.3 Consequences of the use of unsuitable CTUs

2.3.1 A CTU should be suitable for the distinguished cargo to be packed. Climatically sensible cargoes may require ventilated containers or moreover CTUs with controlled atmosphere (reefer or heated containers) to avoid serious damages or losses. Heavy cargo units may require CTUs capable to carry concentrated loads on narrow foot prints to avoid structural failure or overloading (see 2.4 below).

2.3.2 CTUs showing structural deficiencies may fail under normal transport conditions, e.g. the bottom of a damaged container may collapse when the container is lifted, the front wall of a damaged road vehicle may give way upon hard braking or goods in a container with leaking roof may suffer from entering water. This makes a thorough pre-check of each CTU indispensable before packing may commence.

Figure 2.5: Frozen water from leak in roof (left), local overloading of bottom (right)

2.4 Consequences of overloading of CTUs

2.4.1 A CTU overloaded by excess weight presents a serious threat to the safety of work of the various persons along the chain of transport, who are in charge of handling, lifting or driving the CTU. This applies to all modes of transport on road, rail and sea.

2.4.2 There is an additional hazard to road and rail vehicles when an overloaded container leads to exceeding the permissible gross-weight of the vehicle. This hazard may be aggravated by a road driver's usual unawareness of the overweight, so that he may not adjust his driving habits accordingly. A further hazard may arise from the specific conditions in intermodal road/rail transport, as rail-car design does not always provide for a sufficient overweight safety margin.

2.4.3 The main hazard from overloaded CTUs is related to the process of lifting when loading or unloading the CTU on or off a ship or vehicle and when handling the CTU by mobile stackers in a terminal area. Most cranes are equipped with weight limit controls. However, as these are designed to protect the crane from overstressing, they will scarcely assist in the detection of overweight CTUs.

2.4.4 When an overweight cargo transport unit is offloaded from a ship or vehicle, its condition may only be discovered upon being removed for stacking in the terminal area and the handling equipment being found to have inadequate lifting capacity. Handling equipment, in some ports, may not be available for handling such heavy units. This may cause undesirable delay of transport.

2.4.5 In view of the above, all efforts should be taken to prevent overloading of CTUs. However, if a unit is found to be overloaded, it should be removed from service until it has been repacked to its maximum gross mass.

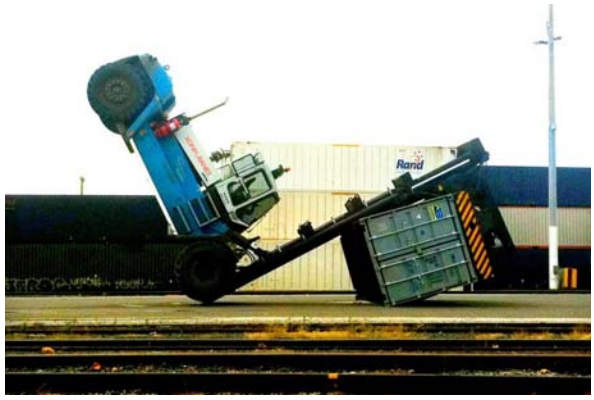

Figure 2.6: A reachstacker is tipped forward by an overloaded container (© abc.net.au)

2.5 Consequences of improper documentation

2.5.1 Missing or incomplete documentation may hamper the proper planning or executing the packing of a CTU. It may also interfere with the further transport and generate delays and thereby economic losses. This applies also to the correct and timely communication of non-technical information like the identification number or the seal number.

2.5.2 Missing information to the carrier on unusual transport parameters, like extraordinary cargo properties, overheight, overwidth, overweight or offset of centre of gravity, may cause damage to the cargo due to handling that would not be adjusted to the unusual properties.

2.5.3 Missing or wrong information on dangerous goods may lead to improper stowage of the CTU on the transport vehicle, in particular a ship. In case of an incident such as spillage or fire, missing dangerous goods information will impede emergency response actions.

2.5.4 Improper gross mass declared for a CTU could result in overloading of a road vehicle or a rail car, especially if two or more units are loaded on one vehicle or one rail car. In case of sea transport, improper mass declaration of a container may result in an improper stowage position on board the ship and thereby in a fatal overstressing of the securing arrangement of the distinguished stack of containers.

Figure 2.7: The collapse of a container stack may have various causes.
One cause could be the overstressing of lashing devices (© KIMO International)