



**REGIONAL SEMINAR – HELSINKI 2013.**

**CONSTRUCTION OF  
VEHICLES  
for  
TIR APPROVAL**

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**Denmark**

# **STANDARDS OF CONSTRUCTION – TIR Convention**

## **Annex 2**

**REGULATIONS ON TECHNICAL CONDITIONS APPLICABLE TO ROAD VEHICLES WHICH MAY BE ACCEPTED FOR INTERNATIONAL TRANSPORT UNDER CUSTOMS SEAL**

### **Article 1**

#### **Basic principles**

**Approval for the international transport of goods under Customs seal may be granted only to vehicles, the load compartments of which are constructed and equipped in such a manner that:**

- a) no goods can be removed from or introduced into, the sealed part of the vehicle without leaving obvious traces of tampering or without breaking the Customs seal;
- b) Customs seals can be simply and effectively affixed to them;
- c) they contain no concealed spaces where goods may be hidden;
- d) all spaces capable of holding goods are readily accessible for Customs inspection.

Specific requirements for road vehicles are further described in Articles 2 – 4 : Approximately 50 pages in the TIR Handbook by:

**Text – Explanatory notes - Comments - Sketches**

**Covers:**

- **Structure (assembly methods - strength etc.)**
- **Joining devices (screws – bolts – rivets – nuts etc.)**
- **Hinges (doors – sideboards etc.)**
- **Closing systems (doors – flanges – covers etc.)**
  
- **Sheet (material – affixing – repair etc.)**
  
- **Sliding sheet / roof systems (Curtain sliders)**

**DEVELOPMENTS - by the TRANSPORTINDUSTRY (during the years)**

- **“Details” invented by MANUFACTURERS or requested by TRANSPORTCOMPANIES.**
- **“Type” of vehicles requested by TRANSPORTCOMPANIES – matching i.e. loading methods / commodities of today.**

**Such developments:**

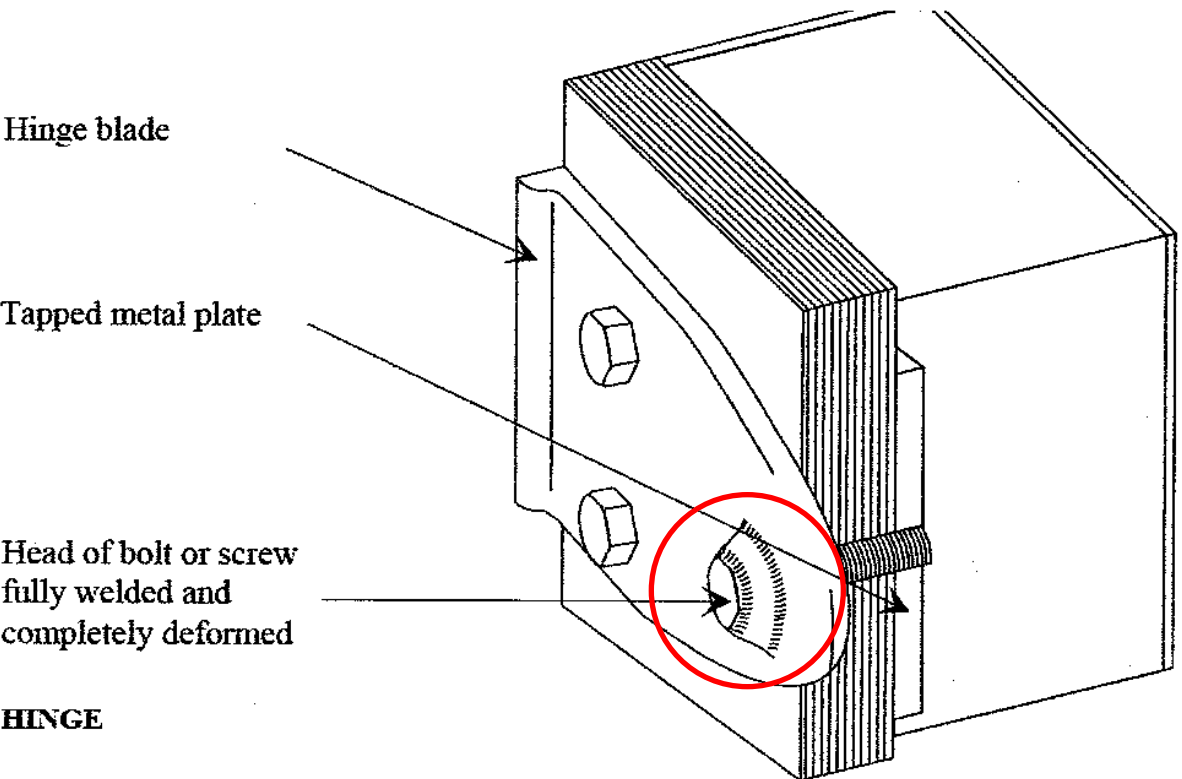
**MUST FULFILL the standard – security - as requested by the TIR Convention**

**EXAMPLES**

- **Hinges (doors)**
- **Door Closing System / Sealing device**
- **Vehicle with special construction of the FLOOR**
- **Vehicles with special opening features – sliding sheet and sliding roof – “Curtain Siders”.**

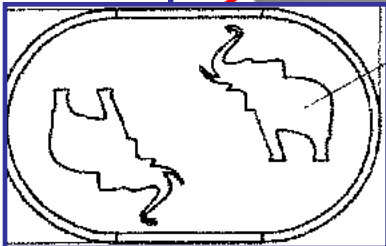
# HINGES – doors

TIR Handbook pg 188 – Insulated vehicle – but also used on “solid siders” and “sheeted vehicles” with rear doors:



## HINGES – doors

**Step 1: Bolt with countersink and secured by welding.**



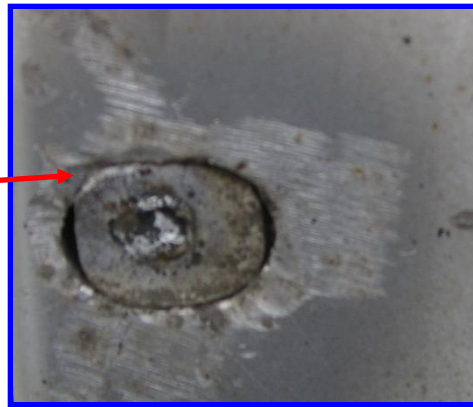
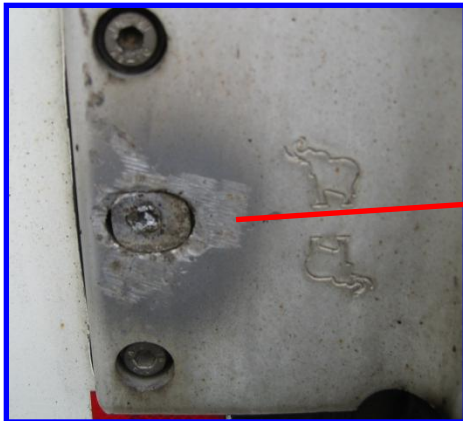
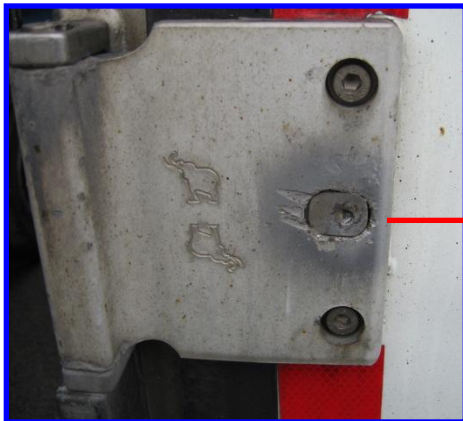
**As finishing detail the oval hole will be fully covered - a plate with the company logo is “spot-welded” to the bolt leaving a smooth surface.**

Photos kindly provided by:



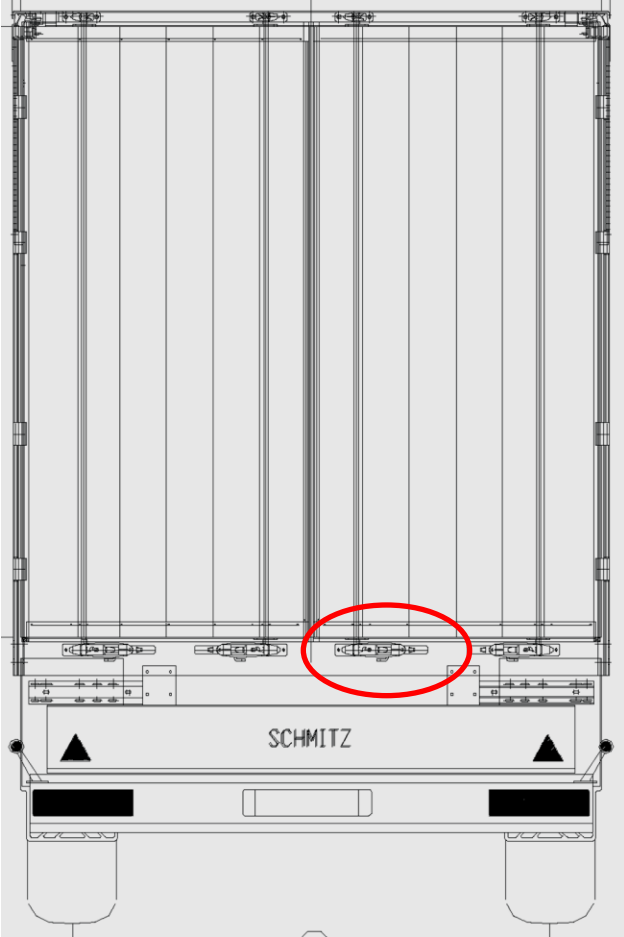


“Repair” of door hinges – very poorly made. The entire hinge-plate should have been replaced – with the proper SCHMITZ cover plate. Do this repair (welding of bolt) make the hinges secure?

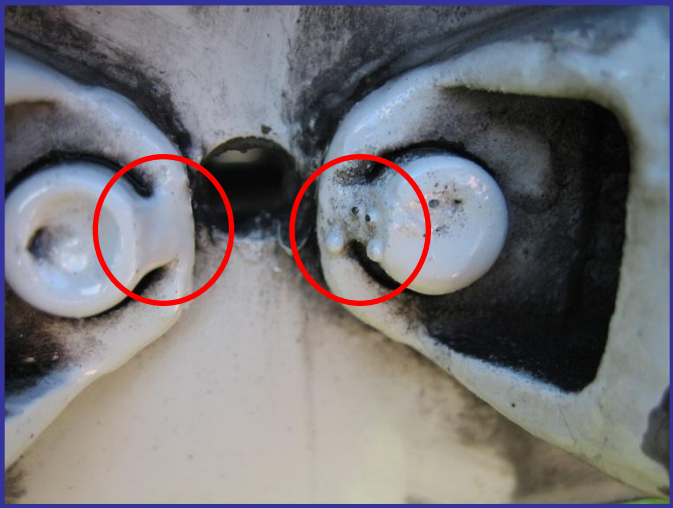


**WHEN and WHERE WAS THIS REPAIR MADE.**  
During this journey?  
Previous journeys?

# Door Closing System / Sealing device

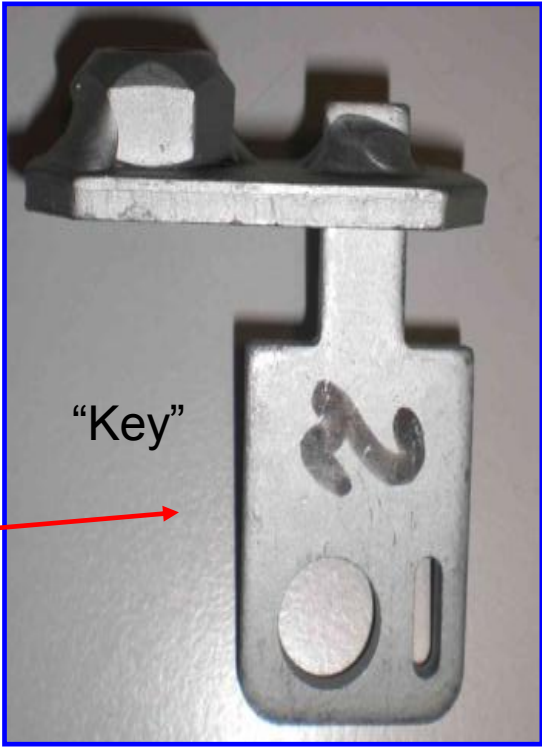


Assembly method: Door closing system mounted to the chassis – bolts secured by welding.



# Door Closing System / Sealing device

New construction – NO welding required for mounting/assembly.

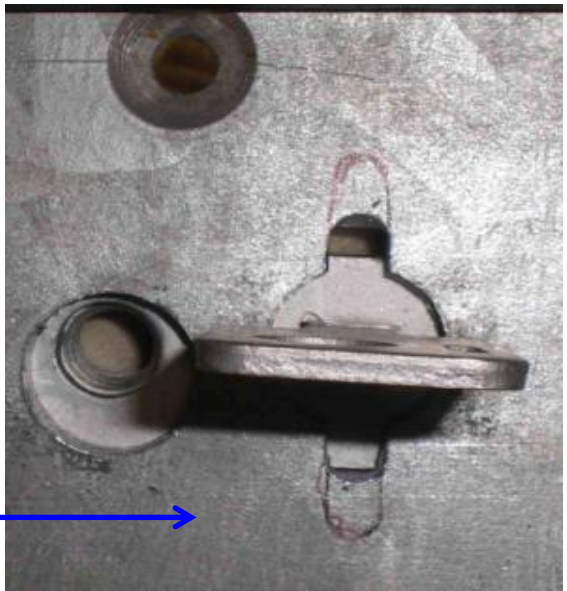


Photos kindly provided by:

# Door Closing System / Sealing device



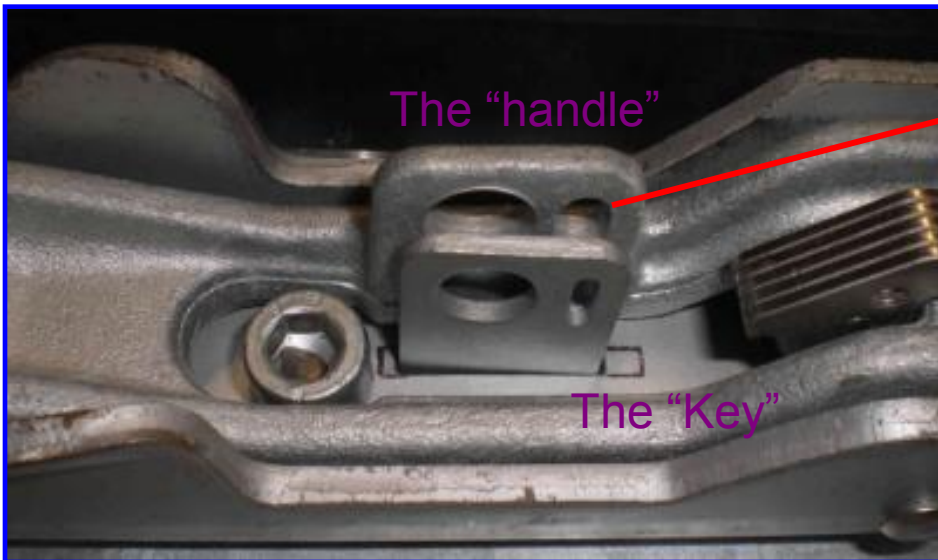
View from the back side



View from the front side

Photos kindly provided by:

# Door Closing System / Sealing device



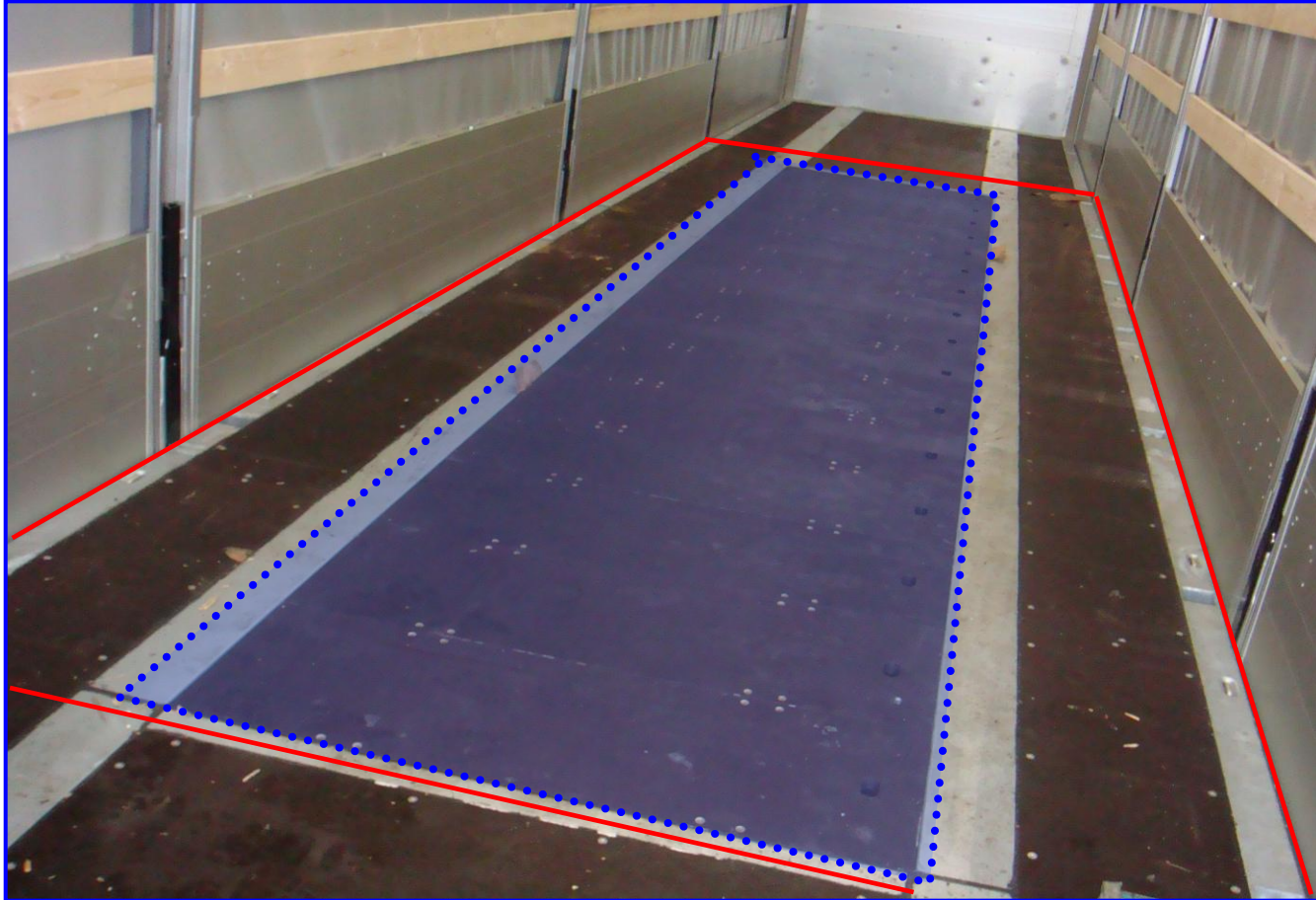
Holes for the TIR wire, and/or Customs seal.

Photos kindly provided by:



The Trailer Company.

## Vehicle with special construction of the FLOOR



The area marked with the blue “dotted” line is covered by 16 loose floor-boards. They can all be lifted individually, and a V-shaped trough will be uncovered.

## Vehicle with a special construction of the FLOOR

**Purpose: Safe and secure transport of cylindrical items.**

**A conflict related to TIR Approval will arise as soon as goods are placed on top - or across - of one (or more) of the loose floorboards. Please note Annex 2, Art. 1, (c and d).**



## Vehicle with a special construction of the FLOOR

Construction of the floor of a trailer – “loose floorboards”.

Due to the reinforcement construction, each individual floorboard holds 3 empty spaces underneath! It is impossible to inspect the floorboards without offloading goods placed on top of them – only the very bottom of the trough can be inspected! NO TIR approval!





**Vehicles with special opening features – sliding sheet and sliding roof – “Curtain Siders”. (TIR, Annex 2, Art. 4 (+ Art. 1-3))**  
**Very sought-after type of vehicle.**



**Such vehicles are often also equipped with a sliding roof.**



**Photo by Jose Ferreiro**

## **Security challenges**

**– always “small” openings can be found!**

**Bottom of the vehicle (sheet) – Overlap - TIR rings - Eyelets – Wire (rope)**

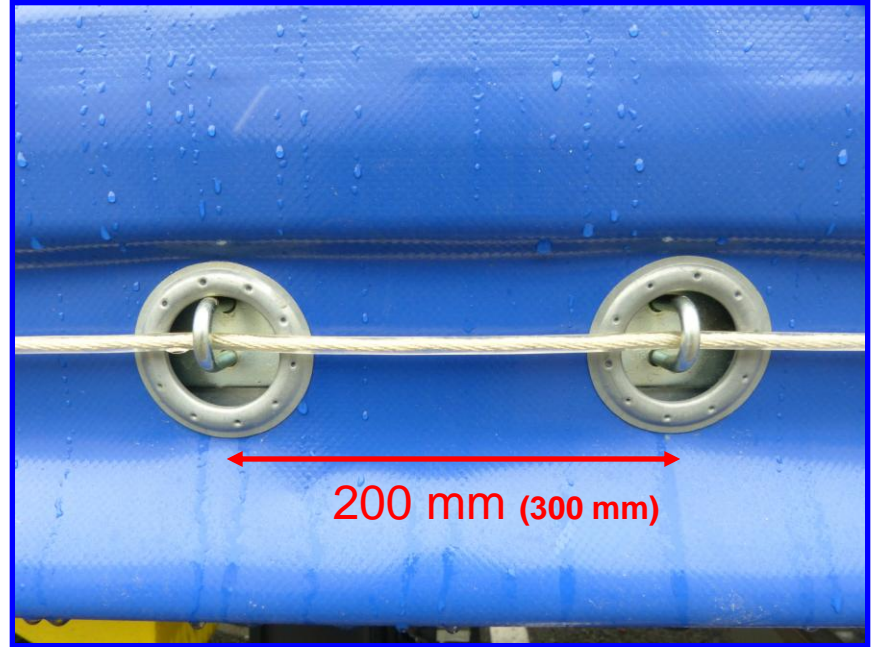
**Tensioning devices - various systems – front and/or rear**

**Upper part – Cantrail guidance/rollers for the sliding sheet, Carriage for the sliding roof.**

### **Extract from the Check-list prepared by the CLCCR**

2. No goods must be able to be removed from or introduced into the sealed part of the vehicle without leaving obvious traces of tampering or without breaking the customs seal. For vehicles with sliding sheets, this means that with the clasps fully undone and with the sliding sheet in the closed position, it must not be possible to introduce a hand, a packet of cigarettes or an other object into the load compartment without breaking a customs seal.

## **BOTTOM - Floor**

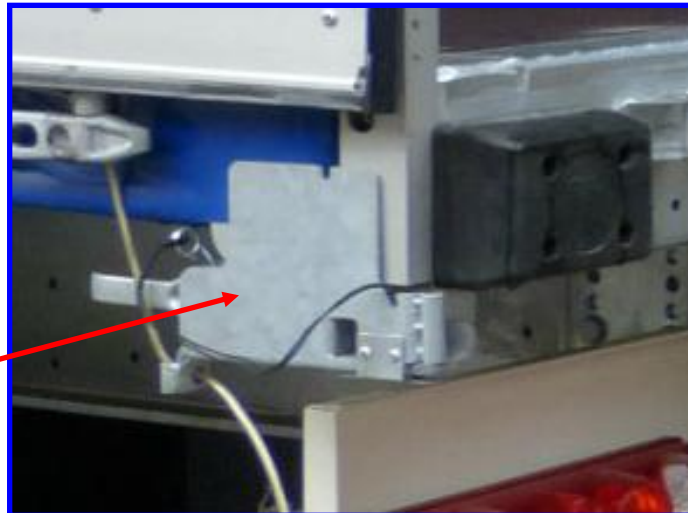
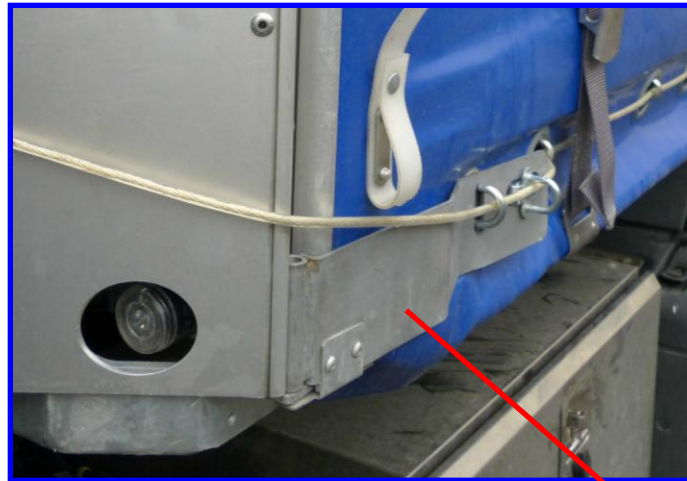


At the bottom: The sheet must overlap the solid part of the vehicle by min. 50 mm – TIR rings - corresponding eyelets – secured by the wire/rope. Distance between the TIR rings: max. 200 mm (max. 300 mm across upright posts)

It must not be possible to pull the sheet more than 10 mm away from the solid part of the vehicle.

# TENSIONING DEVICE - Tensioning bar / Draw tube

Rear



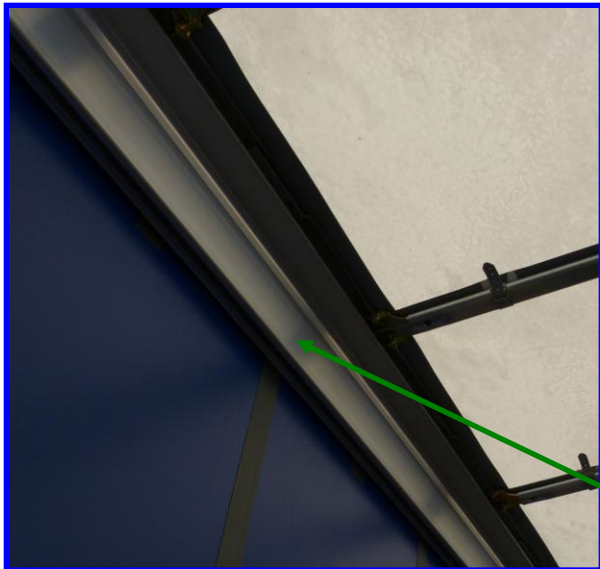
Front

# ROOF and Upper cantrail.



- White sheet/tarpaulin as cover for the sliding roof
- Black rubber pelmet as protection for the guidance system / rollers
- Blue sheet/tarpaulin used for the sliding sheet

**It should not be possible to get a hand inside – or to introduce a packet of cigarettes at the two spots indicated.**

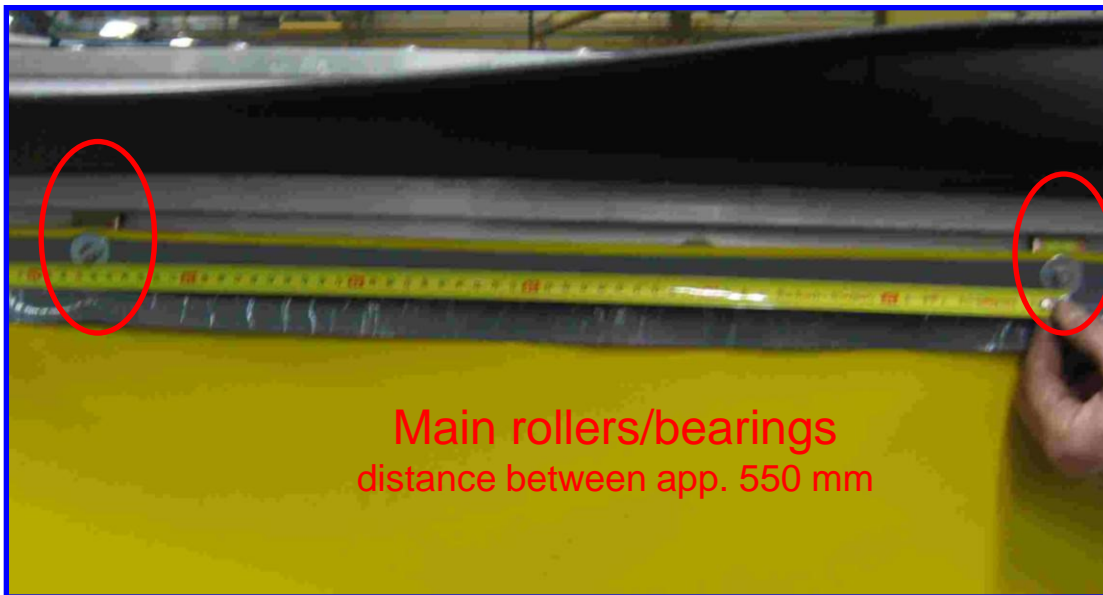


Aluminum Cantrail profile  
- Providing overlap

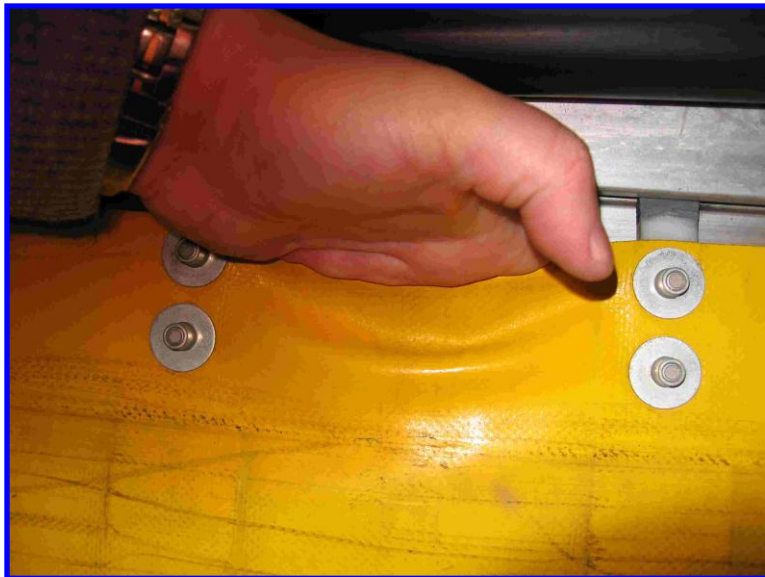
**TEST**  
Pull the roof sheet/tarpaulin and try!  
Lift the rubber pelmet and try!



Inspection / control of space between the sheet/tarpaulin for the roof and the cantrail system – limited space only (rather cold outside temperature)



Inspection / control of space between the sliding sheet and the cantrail system – it is indeed possible to get a hand Inside – app. 550 mm between The rollers/bearings!



Two additional rollers/bearings mounted between the main bearings. It is NOT possible to get your hand inside. Distance between each roller/bearing 150 mm – 180 mm.

This will have an impact on the opening along the side of the vehicle – the sheet cannot slide a distance providing “full opening” along the side for loading.



**Ongoing discussion and proposals related to Annex 2, Art. 4. is exchanged and processed between the Body and Trailer Building Industry (CLCCR), the WP.30 Working Group and the TIR Executive Board (TIRExB).**

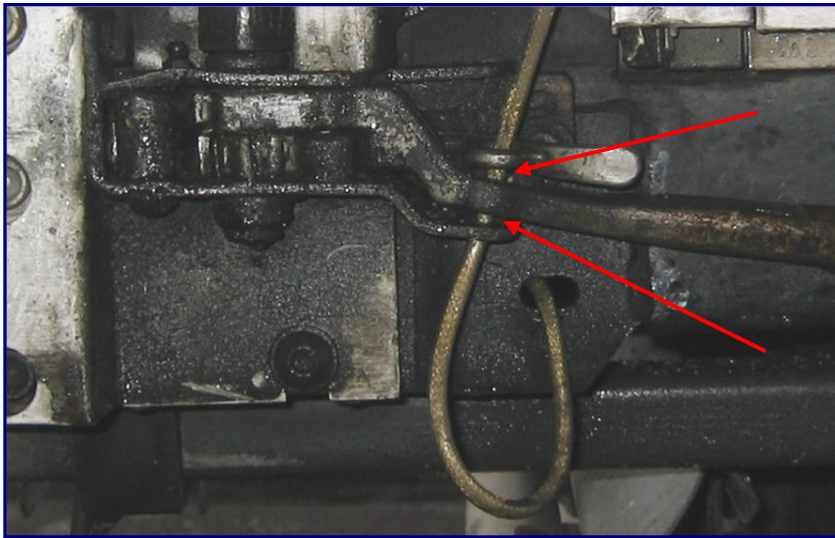
**Additional Article – The sliding roof?  
Detailed sketches to be added in the TIR Handbook?  
(Tensioning device – Sheet/Roof guidance)**

**Additional Explanatory notes / comments?**

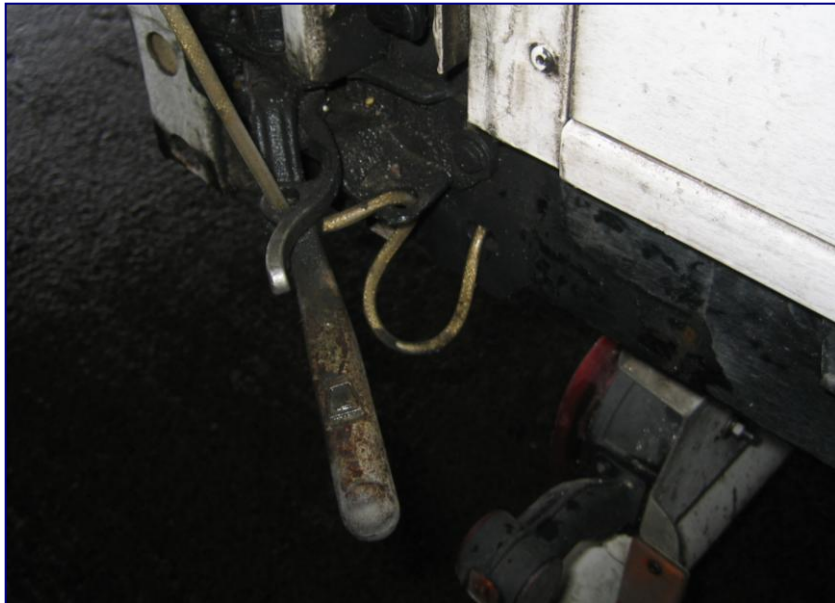
**WHAT CUSTOMS DO**

**NOT**

**LIKE TO SEE**



**Gap between handles and a few centimeters of TIR wire required for this operation!**

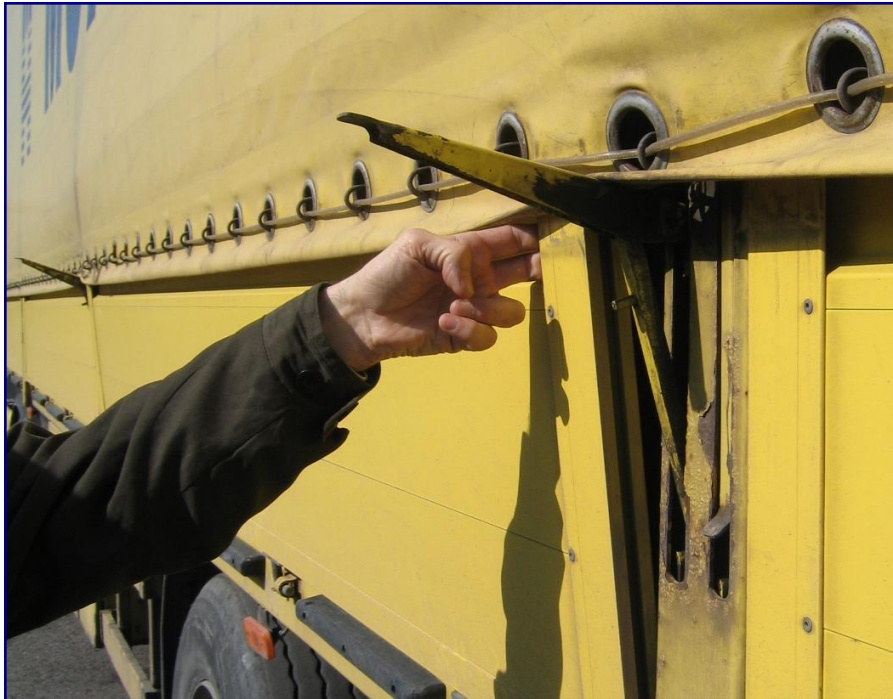




**Gap between the pivoting plate and the back plate - and a few centimeters of TIR wire required for this operation!**



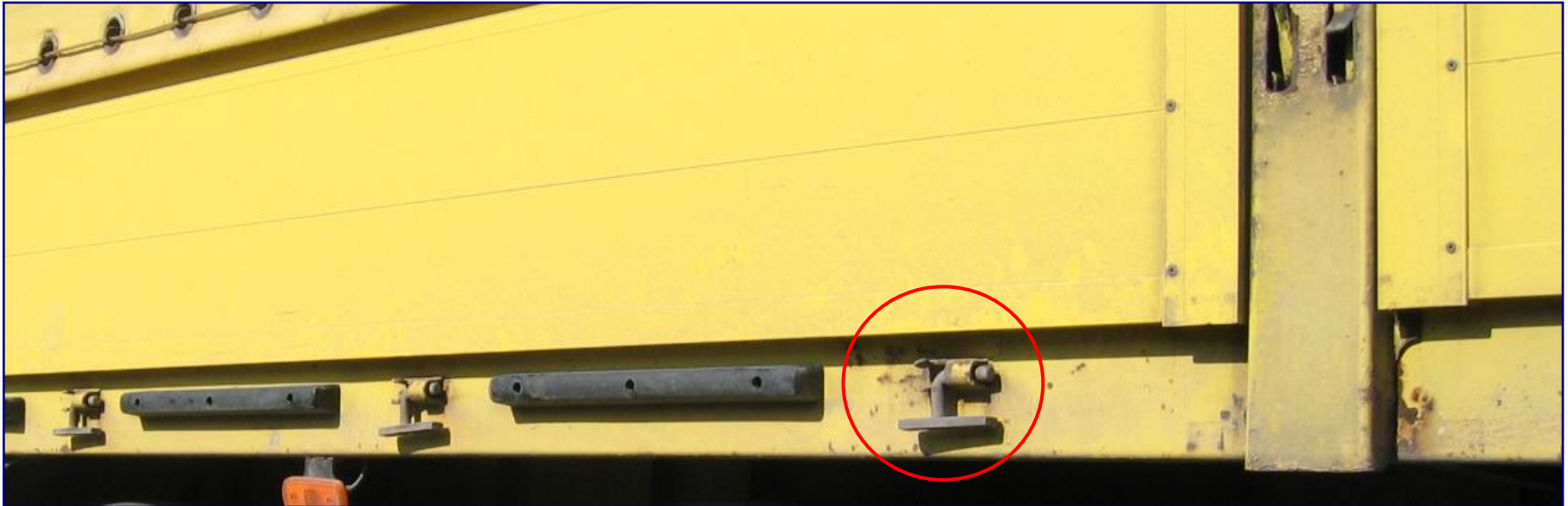
# STANDARD SHEETED VEHICLE:



**Lock system for the side-boards NOT protected – easy to operate the handles.**

**Hinge taken to be "secure by its construction" – but ALLEN bolts can be removed using a modified key (shortened)**

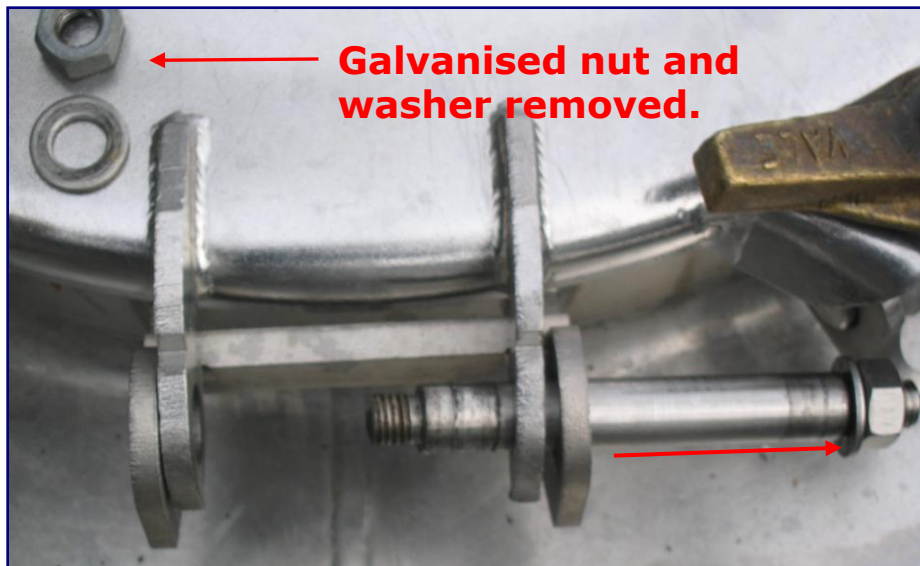
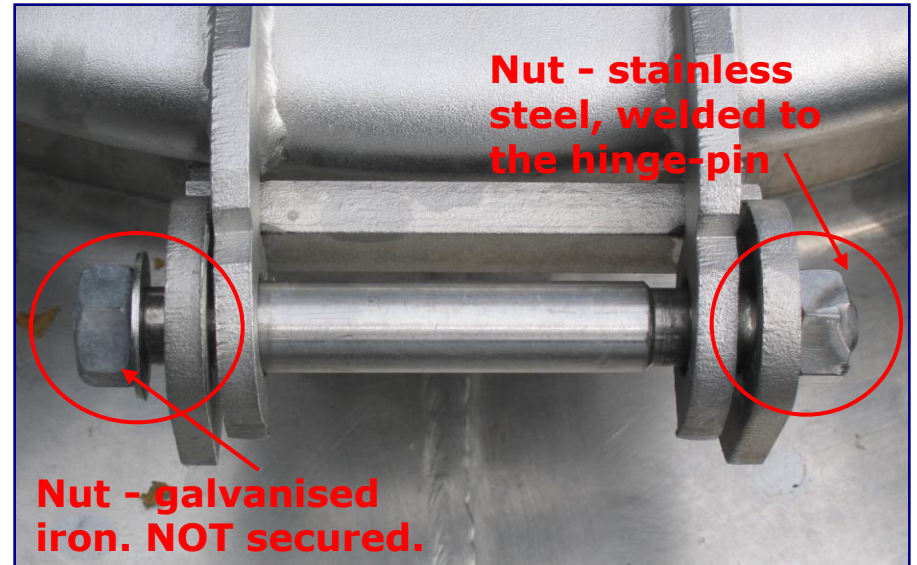


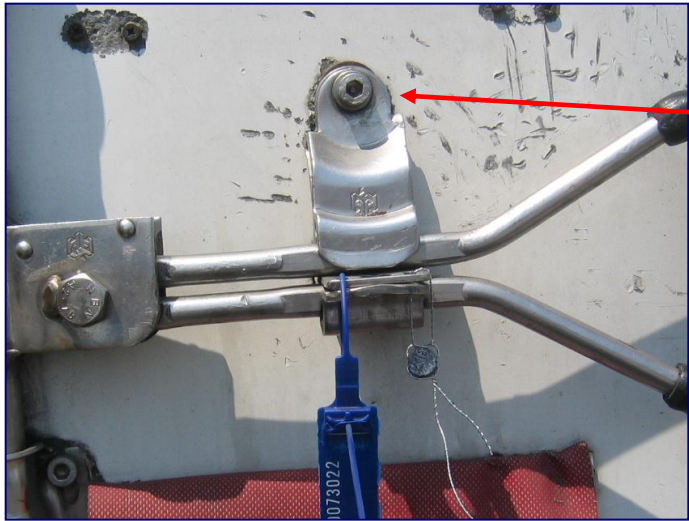


**Hinges (4 pcs) removed from the side-board.**

**Good access to the load compartment!**

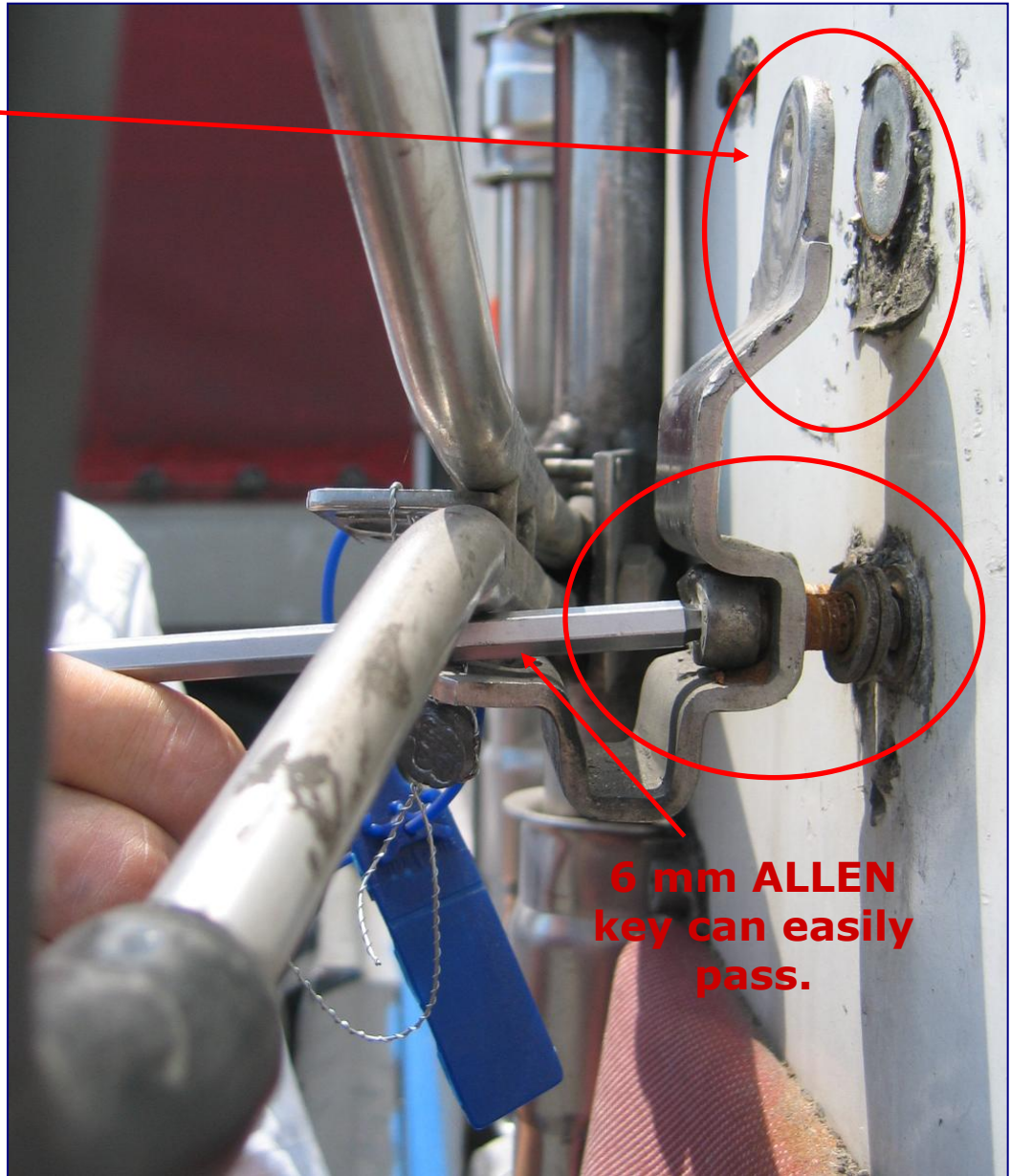
# Category 2: Tampering or Manipulation!





**ALLEN bolt for the pivoting plate not secured – easy to remove.**

**Unscrew the two “ALLEN” bolts – meant to secure the back-plate.**



**6 mm ALLEN key can easily pass.**

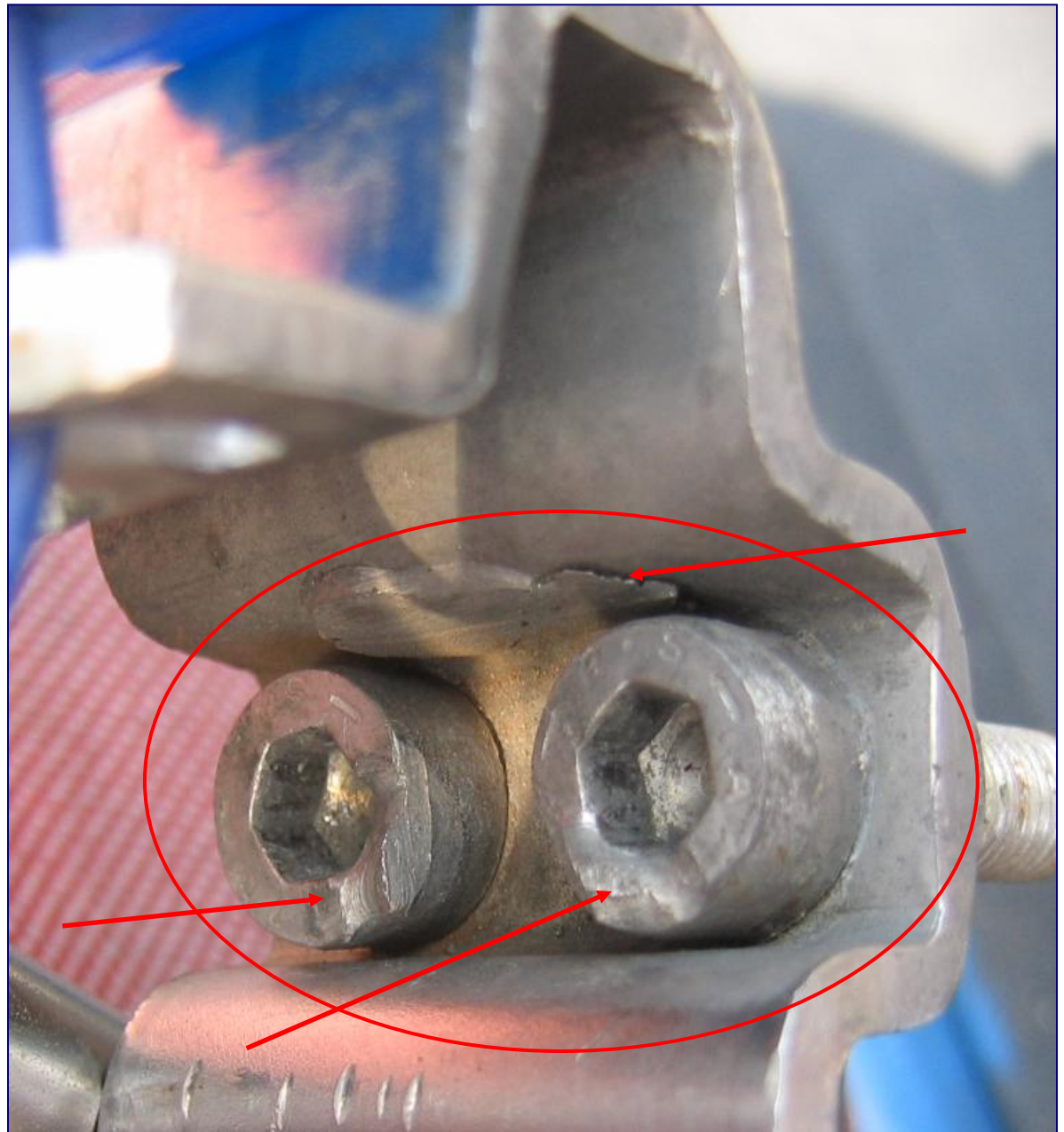


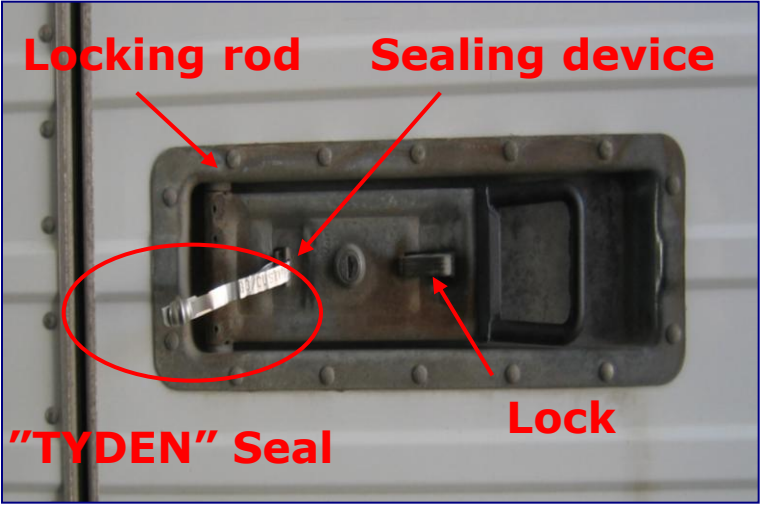
**Close up picture of the two "ALLEN" bolts and the back plate.**

**It is obvious that the welding is removed – most likely by using an angle-grinder!**

**Such tampering is made for one purpose only:**

**To obtain illegal access to the load compartment!**





# **THANKS FOR YOUR ATTENTION**

**I will be present during the entire Seminar – any questions are welcome  
and I will do my best to answer.**

**(I know a lot – but I will never claim to know everything)**