



ASSOCIATION
OF AMERICAN
RAILROADS



Universal Securement Chock Loading Study March 2011 Update

VEQ Universal Securement Test Loading Summary 3/2011

| Chock System | Trips | Origin Insp | % | Dest Insp | % | Both Origin/Dest | % |
|-----------------------|------------|-------------|------------|------------|------------|---------------------|------------|
| Trinity Tri | 104 | 50 | 48% | 46 | 44% | 24 | 23% |
| Std.Car/Zeftek Tri | 141 | 66 | 47% | 54 | 38% | 30 | 21% |
| Holland Bi | 60 | 39 | 65% | 41 | 68% | 31 | 52% |
| Holland Bi/Tri | 76 | 54 | 71% | 54 | 71% | 43 | 57% |
| Std.Car/Zeftek Bi | 60 | 35 | 58% | 36 | 60% | 24 | 40% |
| Std.Car/Zeftek Bi/Tri | 80 | 53 | 66% | 56 | 70% | 42 | 53% |
| Trinity Bi | 45 | 32 | 71% | 31 | 69% | 23 | 51% |
| Holden Bi | 47 | 32 | 68% | 31 | 66% | 23 | 49% |
| Holden Bi/Tri | 61 | 42 | 69% | 42 | 69% | 32 | 52% |
| Totals | 674 | 403 | 60% | 391 | 58% | 272 | 40% |

| Railcar | Chock System | Trips | Origin Insp | % | Dest Insp | % | oth Origin/Des | % | Problems |
|------------|------------------------|-------|-------------|------|-----------|------|----------------|------|----------|
| ETTX701179 | ZEFTEK - BI | 5 | 3 | 60% | 5 | 100% | 3 | 60% | 2 |
| ETTX701184 | ZEFTEK - BI | 5 | 5 | 100% | 5 | 100% | 5 | 100% | 2 |
| ETTX701210 | ZEFTEK - BI | 5 | 5 | 100% | 5 | 100% | 5 | 100% | 3 |
| ETTX701485 | ZEFTEK - BI | 5 | 5 | 100% | 5 | 100% | 5 | 100% | 3 |
| ETTX701544 | HOLLAND | 4 | 4 | 100% | 4 | 100% | 4 | 100% | 1 |
| ETTX701628 | HOLLAND | 4 | 4 | 100% | 4 | 100% | 4 | 100% | 2 |
| ETTX802024 | HOLDEN | 4 | 3 | 75% | 4 | 100% | 3 | 75% | 0 |
| ETTX802241 | HOLDEN | 4 | 3 | 75% | 3 | 75% | 2 | 50% | 0 |
| ETTX909665 | HOLLAND | 4 | 3 | 75% | 3 | 75% | 2 | 50% | 0 |
| ETTX909722 | HOLLAND | 4 | 4 | 100% | 2 | 50% | 2 | 50% | 2 |
| ETTX802004 | HOLDEN | 3 | 2 | 67% | 2 | 67% | 2 | 67% | 0 |
| ETTX802224 | HOLDEN | 3 | 2 | 67% | 2 | 67% | 2 | 67% | 0 |
| ETTX803317 | Trinity Tri | 23 | 9 | 39% | 14 | 61% | 5 | 22% | 3 |
| ETTX853880 | Mixed Tri | 41 | 19 | 46% | 12 | 29% | 8 | 20% | 1 |
| ETTX909272 | Std.Car/Zeftek Tri | 33 | 19 | 58% | 18 | 55% | 9 | 27% | 2 |
| SP 517141 | Mixed Tri | 40 | 22 | 55% | 20 | 50% | 11 | 28% | 1 |
| ETTX909805 | Std.Car/Zeftek Tri | 7 | 0 | 0% | 2 | 29% | 0 | 0% | 0 |
| TTGX254046 | Holland Bi | 25 | 20 | 80% | 20 | 80% | 16 | 64% | 8 |
| TTGX700261 | Zeftek Bi | 25 | 16 | 64% | 15 | 60% | 9 | 36% | 4 |
| TTGX982500 | Mixed Bi | 23 | 19 | 83% | 18 | 78% | 15 | 65% | 8 |
| TTGX995144 | Trinity Bi | 22 | 13 | 59% | 13 | 59% | 8 | 36% | 5 |
| TTGX986577 | Holden Bi | 24 | 13 | 54% | 13 | 54% | 8 | 33% | 1 |
| AOK 501865 | Std.Car/Zeftek Tri | 20 | 6 | 30% | 2 | 10% | 2 | 10% | 1 |
| TTGX851226 | Holland Bi, Std.Car Bi | 7 | 0 | 0% | 1 | 14% | 0 | 0% | 1 |
| TTGX700942 | Holland Bi, Std.Car Bi | 5 | 0 | 0% | 2 | 40% | 0 | 0% | 2 |






Holland Grate Chocks

| Chock System | Trips | Origin Insp | % | Dest Insp | % | Both Origin/Dest | % | # of Dest Reports with Exceptions | % of Dest Reports with Exceptions |
|----------------|-------|-------------|-----|-----------|-----|------------------|-----|-----------------------------------|-----------------------------------|
| Holland Bi | 60 | 39 | 65% | 41 | 68% | 31 | 52% | 19 | 32% |
| Holland Bi/Tri | 76 | 54 | 71% | 54 | 71% | 43 | 57% | 24 | 32% |

Exceptions Noted

1. Chock Straps Slipping Off Tires.
2. Chock Disengagement From Grating
3. Stored Chocks Falling Off Storage Pans

RAILCAR: TTGX 254046 WAYBILL DATE: 12-10-2010
 ORIGIN: SHREVEPORT, LA
 DESTN: NASHVILLE, TN DATE INSPECTED: 12-15-2010
 CSX LOCATION: NASHVILLE, TN
 ROUTING: _____ INSPECTED: _____
 INVESTIGATED BY: MATTHEW CONNER TEL. NO.: 615-834-0990
 COMPANY NAME: VASCORLTD SHIPPER: _____
 1. REMOTE MONITORING DEVICE REMOVED? _____ TYPE & TIME _____
 2. NUMBER OF DAYS MULTI-LEVEL IN _____ DAYS _____
 TRANSIT: _____

| Pos | Photo info | Insert Photos | |
|-----|---|---|---|
| A3 | Chock system: HOLLAND | Photo of Auto tied down | |
| | |  | |
| | VIN: 1GCHTDFE7B8116367 | Insert Photo | Insert Photo |
| | Make/Model: Truck |  |  |
| | Transmission Setting: Park | | |
| | Comments: Straps slipped off of 3 of the 4 tires. | Insert Photo | Insert Photo |
| | |  |  |

Holland Bi-Level Chocks

Loader/Unloader Comments:

- Heaviest of the three options and quite a bit heavier than current tri level chock
- Because of the elaborate strap looping and fastening, an inordinate amount of time spent kneeling or bent over
- Chock is also very "sensitive on the split" meaning it is difficult to place when grating panels meet
- System often required vehicles to be recentered, which had a chain reaction down the line and subsequent rework of chocks, etc.
- Strap tends to twist at the base of the chock at the T-slot.
- Of the three options presented, was the least preferable

Jan-20-11 - TMMC Loaders Comments concerning Holland Chock:

1. "This chock is too heavy and 3 times the weight of what we are using now"
2. "If we have to use these chocks, we will have to move the paddle over to the right or left each time they come in"
3. "You have to be on your hand and knee's when installing this chock"
4. "This is not the easiest chock to work with"
5. "Don't like the way the blue strap gets hung up into the T-slot when pulling out the strap"

Holland Bi-Level Chocks

Loader/Unloader Comments:

- Strap will not retract in the chock when in the unlocked position
- Securing chock to sidewall of railcar is awkward compared to other chocks. A lot of time is wasted trying to align chock perfectly so that it can be secured properly.
- Rubber coating missing from several hooks.

Holden Grate Chocks

| Chock System | Trips | Origin Insp | % | Dest Insp | % | Both Origin/Dest | % | # of Dest Reports with Exceptions | % of Dest Reports with Exceptions |
|---------------|-------|-------------|-----|-----------|-----|------------------|-----|-----------------------------------|-----------------------------------|
| Holden Bi | 47 | 32 | 68% | 31 | 66% | 23 | 49% | 1 | 2% |
| Holden Bi/Tri | 61 | 42 | 69% | 42 | 69% | 32 | 52% | 1 | 2% |

Holden Bi-Level Chocks










Loader/Unloader Comments:

3. "Strapless" Chocks **Holden Chock** |

- Lightest of the three chocks
- Least amount of time spent kneeling or bent over
- Fits well into grating
- Believes 8 chocks vs. 4 or 6 is excessive, inboard chock placement is difficult.
- Concern about durability of chock, especially in cold frozen conditions. Evidence is that one chock already had a broken handle
- Despite concerns, viewed as best of three options

Holden Bi-Level Chocks

Loader/Unloader Comments:






| Pos | Photo info | | Insert Photos | | | |
|-----|------------------------------|---|---|--|--|--|
| A1 | Chock system: | Holden MMC | Photo of Auto tied down  | | | |
| | VIN: | 1GKLRMED0AJ240414 | Insert Photo Left Front Outboard  | | Insert Photo Right Front Outboard  | |
| | Make/Model: | GMC Acadia | Inboard  | | Inboard  | |
| | Transmission Setting: | Park/Neutral/Other-explain Park | | | | |
| | Comments: | <p>When the chock is on the wall it seems to hold water, may cause issues in the winter.</p> <p>The flag that shows the chock is locked in the grate did not deploy 100% although the chock is installed and engaged correctly.</p> <p>One chock showed the flag but the front teeth were not engaged into the grate.</p> | Insert Photo Left Rear Outboard  | | Insert Photo Right Rear Outboard  | |
| | | | Inboard  | | Inboard  | |

Trinity Bi-Level Chocks

| Chock System | Trips | Origin Insp | % | Dest Insp | % | Both Origin/Dest | % | # of Dest Reports with Exceptions | % of Dest Reports with Exceptions |
|--------------|-------|-------------|-----|-----------|-----|------------------|-----|-----------------------------------|-----------------------------------|
| Trinity Bi | 45 | 32 | 71% | 31 | 69% | 23 | 51% | 13 | 29% |

Exceptions Noted

1. Chock Strap Disengagement From Grating
2. Chock Strap falling Off Vehicle Tires

| Pos | Photo info | Insert Photos | |
|-----|--|--|---|
| A1 | Chock system: TRINITY | Photo of Auto tied down  | |
| | VIN: 1GKKRTED7BJ293893 | Insert Photo | Insert Photo |
| | Make/Model: GMC ACADIA |  |  |
| | Transmission Setting: Park/Neutral/Other-explain PARK | | |
| | Comments: A1 Unit arrived with the LF strap dislodged from the wheel. The rear retaining hook was no longer in the grate and the strap arrived lying beside the wheel. No damage was found on the A1 unit. | Insert Photo | Insert Photo |
| | |  |  |

Trinity Bi-Level Chocks Snow and Ice Test



- High power backpack leaf blowers utilized to remove snow
- All securement holes in the decking were free of ice and snow
- Areas where decking was hinged were not lifted
- All ratchets and straps in proper working order
- Total time in pre-trip process was 16 minutes

Trinity Bi-Level Chocks

Loader/Unloader Comments:






- Anti-abrasion sleeve becomes torn and/or missing easily.
- Tripping hazard when fastened to grate.
- Can cause damage to bumpers when pumping handle to loosen strap.
- Can potentially snag fingers.
- Exposed metal from handle and hooks can damage vehicle if it makes contact.
- Loosening strap time-consuming and clumsy compared to chock.
- All ratchet handles are out board.
- All straps require hand and knee installation.

Zeftec/SCT Chocks

| Chock System | Trips | Origin Insp | % | Dest Insp | % | Both Origin/Dest | % | # of Dest Reports with Exceptions | % of Dest Reports with Exceptions |
|--------------------|-------|-------------|-----|-----------|-----|------------------|-----|-----------------------------------|-----------------------------------|
| Std.Car/Zeftek Bi | 60 | 35 | 58% | 36 | 60% | 24 | 40% | 15 | 25% |
| Std.Car/Zeftek Bi/ | 80 | 53 | 66% | 56 | 70% | 42 | 53% | 25 | 31% |

Exceptions Noted

1. Chock Strap Disengagement From Grating
2. Chock Strap falling Off Vehicle Tires

| Photo info | | Insert Photos | |
|-----------------------|---------------------------------|---|---|
| Chock system: | Zeftek | Photo of Auto tied down | |
| VIN: | 1GZC5EU4BF288265 |  | |
| Make/Model: | Malibu |  |  |
| Transmission Setting: | Park/Neutral/Other-explain Park |  |  |
| Comments: | Right Front Chock release | | |

Zeftec/SCT Chocks

Loader/Unloader Comments:

2. "Thin Strap" Chock

- Chock strap seemed to be an afterthought and consequently, does not seem to be particularly well incorporated into chock design
- Because thin straps and design, very difficult to position within the chock, as well as across the tire, therefore requiring more kneeling and bending over
- The rail crew also claims that these straps cannot be tightened once they are hooked into the grating

4 test railcars (ETTX701179, 701210, 701485, 701184) equipped with ZefTek Sta-Put securement devices

Ergonomics:

- Increased installation time and ergonomic strain because you have to bend down to apply securements to 4 tires instead of the 2 tires on traditional tri-levels.
- Loaders are required to really kneel down and place their knee on the grating at each tire during placement and securement of the block chock.

Clearance:

- Difficult to achieve minimum 2-inch clearance from bumper to the chock face on some Lexus models especially Lexus IS and SC in the medium position.
- The knot in the incorporated strap impedes placement of the face plate against the tire to help achieve maximum clearance and securement.
- Lexus IS-F, which is normally loaded using a wood block, could only be loaded in the low position and without use of the strap because clearance was less than a 1-inch in the medium setting which also made it difficult to place the block under the vehicle.
- Metal cam buckle on the incorporated strap is difficult to meeting clearance minimums

Zeftec/SCT Bi-Level Chocks

Loader/Unloader Comments:

Functionality:

- The incorporated strap knot makes it difficult to lift the medium and maximum face plates from the stored position (low).
- The incorporated strap knot requires you to hold the face plate up at the same time you are pulling back on the securement handle to place the chock in the grating.
- The incorporated strap is prone to being twisted and is difficult to unravel and not hit the vehicle with the metal parts.
- The incorporated strap is not very secure or centered after trying to tighten down.
- The pin alignment is slightly off-center on some chocks and that requires you to put lateral and down force on securement handle during installation of pin.
- Colored securement handle is easy to kick or trip over during conveyance inside the railcar.

Railcar:

- You must be very aware of vehicle / tire placement in the A1 and A4 positions because of the modified grating contours and splits at the incline / decline angles. TLS Long Beach loads only 4 vehicles per A-deck
- There were a few sheared off bolts from the grating installation loose on the railcar floor from the installation of the above deck.
- Grating bolts from B-deck protrude through the A-deck roof and can affect roof clearance in the A1 and A5 positions if loading 5 vehicles per A-deck.
- Bolt missing from lower grab handle on the C-deck of ETTX701184