

Container Security – How secure is your product in refurbished containers

Global Logistics Management

Newsletter Date
6 October 2014

Case Study

Incident background

Seven leased TEU's (containers) were supplied by the shipping line, placed on rail flatbeds at the manufacturers (exporter) Explosives Magazines and loaded with Class 1 Commercial Explosives (for use in the mining industry) by the exporter in the presence of the local Competent Authority and local Railway Supervisor. After loading was complete the doors were closed and locked using bolt seals, and 'blocker containers' were positioned on the flat beds at the container doors to prevent unauthorized access to the loaded container doors.

On arrival at the port of loading the containers were delivered to the explosives rail siding and stored 'doors in', pending loading onto ship. In due course the containers were loaded onto ship.

At the East African country of destination the containers were offloaded from ship, loaded onto rail flat-beds with 'doors in', and delivered to an in-country rail terminal pending road delivery to final destination. The containers were stored in a secure area and stacked on top of other containers, again with 'doors in, to prevent access.

On the day of delivery to their final destination each container was removed from the rail terminal and loaded onto flatbed road trailers with doors facing forward— one container per trailer. The journey to destination, on dirt roads through fairly dense terrain, took several hours.

When the trucks arrived at destination the containers were offloaded at the importers security controlled licensed Explosives Magazine area and the seals immediately checked. All seal numbers corresponded with the seal numbers on the export documentation supplied by the exporter, and were intact. The containers were not immediately opened for offloading due to their arrival after dusk.

The following morning the container seals were again checked by site staff and found to be intact. The first container seal was cut and the doors opened. According to documents this container held 750 boxes of Class 1 Explosives. All looked well and unloading commenced. After removal of some of the centre stacks of boxes it was noticed that the remaining stacks were not as high as those just removed, and that there was empty floor space in the centre of the container. It was immediately apparent that this container did not contain the quantity of boxes specified on the documentation. A box count indicated a substantial discrepancy between documents and contents.

The unloading continued and, as in the case of the first container, it was found that quantity discrepancies existed in four more of the six remaining containers, as well as empty floor space in the centre of the containers. A total discrepancy in excess of 700 cases was found.

At that time, the importer believed that the five containers had been short loaded by the exporter. This belief was reinforced by the fact that all seal numbers corresponded to those on the export documents, all seals were intact, undamaged and the containers did not appear to have been tampered with in any way.

The discrepancies were reported to the exporter the following morning and to the local Police, as is required when discrepancies between documentation and container contents, in respect of Class 1 Explosives, comes to light.

Interactions with the Police are not dealt with in this newsletter.



Pic 1. Reconstruction of view of the boxes when the container doors were opened on the first container.

Investigation

The exporter initiated a full investigation which included audits of stock holdings, production receipts and stock issues. The Competent Authority official's report, which confirmed the suitability of the containers and stated the quantities of product loaded, as well as the railway supervisor's report, which recorded similar information to that of the Competent Authority official was also audited. It was concluded, without any doubt, that the quantities indicated on the export documents were the quantities loaded into the containers. Confirmation was also received from all the external role players that the containers were handled in the prescribed manner from the time of their departure from the exporter's site until they were discharged at the destination port. Based on this it was resolved that the most likely scenario was that the boxes of Explosives went missing between the time they were discharged at the destination port and the containers being opened at the importer's site in East Africa.

The importer was advised of this and was naturally quite shocked as this had serious implications. A request was made for immediate assistance in the investigation and this was agreed to by the exporter.

I was instructed to travel to East Africa to liaise with the authorities and render assistance to the importer in their investigation. Having been to the country on a number of occasions I was familiar with the infrastructure and the importers site and operations.

Prior to departure, telephonic contact was made with the importers agents, who confirmed that the containers had been loaded 'doors in' on rail at the destination port. It was also confirmed that the containers were secure at the in-country rail terminal pending loading onto road transport.

On arrival at the site I was advised that two of the containers were at the Explosives Magazine area and still contained boxes of Explosives. Only one of these containers was reported as having product shortage, the other five containers had been unloaded and returned to the shipping line depot.

Four of the bolt seals which had been removed (cut) from the containers were still on hand and were scrutinized however, none of them appeared to have been tampered with.

The container with the product shortage was examined and all appeared to be in order. However, the fact of the matter was that the container must have been opened somehow as product was actually missing. At this point it was decided to test the type of bolt seals that had been used to establish if the locking chamber could be removed from the shaft without visibly damaging the device.

With the limited resources available at the site workshop a rather primitive, but workable, 'puller' device was constructed however, no successful separations were achieved on the seals tested. The locking chamber coverings were damaged on each of the seals.

The following morning a closer examination of the container was carried out. Again, nothing untoward was seen on the outside. The inside of the door told a different story. The various bolts retaining the door hardware were painted over and in some cases the ends of the bolts were spot welded to the nut however, the nut holding the door locking handle retainer appeared to have been tampered with. Paint was missing from the end of the nut/bolt and its appearance indicated that the nut had been removed at some stage (see Pic 4). The nut was embedded in a putty like substance. The bolt was a hex bolt and not a mushroom head indicating that the mechanism had been subject to some sort of maintenance.



Pic 2. View inside container still on site after six of the centre stacks (54 boxes) were unloaded exposing empty space inside and a stack plus other boxes missing at the far end of the container.



Pic 3. Primitive 'puller' constructed in an attempt to separate the locking chamber from the shaft.

Given the status of the nut it was suggested that the door locking retainer bolt may have been removed to gain access to the container. This simple mechanism appeared to be the weak link. This theory was tested.

Using a spanner and screwdriver (to keep the nut/bolt taugt) the bolt was extracted fairly easily releasing the handle retainer and allowing the container to be opened.

The padlock, which at that time was being used to lock the container doors, remained attached to the retainer and handle and was completely ineffective in preventing the door from being opened. See Pics 5, 6, 7, 8 and 9. This would also have been the case had a bolt seal been in the mechanism.



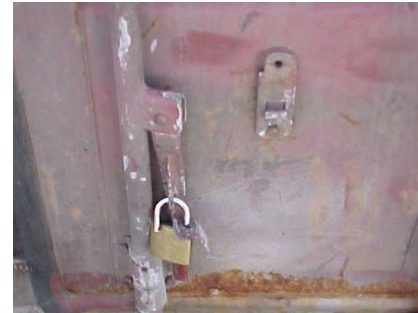
Pic 4. Back of the container door showing the door locking handle retainer bolt/nut. The nut appeared to have been tampered with.



Pic 5. Locking handle retainer with hex bolt.



Pic 6. Bolt being extracted.



Pic 7. Handle retainer released allowing door to be opened.



Pic 8. Hex bolt and nut removed from the locking handle retainer.



Pic 9. Bolt and nut removed. Slightly raised putty like substance can be seen around the hole.

The nut was then repositioned at the hole at the back of the container door and held in position by the putty like substance, door closed, retainer put in place and the bolt screwed back. It took several attempts before the bolt/nut threads connected and the bolt/nut tightened.

The mechanism on the other container on site was also examined even though no quantity discrepancy was found. The retainer mechanism was identical in construction but was held in place by a mushroom bolt. There was no indication that an attempt had been made to interfere with the closing mechanism.

In order to confirm that the containers could have been opened in this way it was crucial that the other containers at the shipping line depot were examined for similarities.

The container depot was contacted and they advised that three of the containers were still at the depot, the other two had, unfortunately, been issued and were in use elsewhere.

The three containers were inspected. They all had the same door locking handle retainer mechanism design as the apparent breached container examined at the importers site and hex bolts were used on the mechanisms. It was apparent that the retainer bolt/nut on each of them had also been tampered with.



Pic 10. Container at depot. Door locking handle retainer nut/bolt. Damaged putty like material around the nut



Pic 11. Container at Depot. Door locking handle retainer nut/bolt. Paint missing from the bolt threads and unknown residue on the nut.



Pic 12. Container at depot. Door locking handle retainer nut/bolt. Paint missing from the bolt threads and unknown residue on the nut.

The retainer nut on one of the containers was embedded in a hardened grey putty like substance similar to the covering over the nut immediately below it — see Pic 10. From its appearance it looked like the retainer nut may also have been completely covered at some point and that the substance was damaged due to the nut being turned. This substance was similar to that seen on the breached container at the importers site. The nuts on the handle retainers on the other two containers had a white substance around them, as depicted in Pics 11 and 12. Both had paint missing from the bolt threads.

It was concluded that the bolts had in all probability been removed from the locking handle retainer on these three containers in order to gain access.

The container depot manager was requested to attempt to remove the bolts. Using a spanner and screwdriver, the bolts on the three containers were easily removed, releasing the mechanisms. The white substance seen on the two nuts was also visible around the bolt holes. This substance was not identified. No attempt was made to replace these with the doors closed. No doubt it would have been difficult, as experienced with the container at the importers site, but certainly possible.

Findings

Based on the findings it was concluded that in all likelihood:

- The containers were breached between the East African in-country rail terminal and the importers site.
- The four containers examined were opened by removing the door locking handle bolts thus compromising the locking mechanism.
- Boxes were removed to gain access to boxes inside the container.
- Boxes were removed (stolen) from inside the container.
- The first boxes removed were replaced to give the impression that the containers were full (all in order) when the doors were opened.
- The door locking handle components were re assembled and affixed to the door with the bolt seals still intact to give the impression, upon delivery, that the containers had not been tampered with.

The findings were discussed with the importer and Police.

Recommendations

To prevent a possible recurrence involving the removal of bolts in an attempt to gain access to containers, it was recommended that:

- Instructions be issued to shipping lines supplying containers where original bolts had been replaced with hex type bolts, that such containers would only be accepted if the bolts were rendered secure by, for instance, spot welding to prevent their removal, irrespective of the design of the closing mechanism.
- Additionally, when containers were purchased by the exporter, the above would be undertaken as soon as the containers were delivered to their site.

These recommendations were accepted and implemented immediately.

The recommendations were also made known to the importer and Police.

The exporter, who maintained high standards where security of their product was concerned, went one step further by instituting spot welding of nuts/bolts, not only on the inside of the container doors, but also on the outside of all containers they purchased.

The exporter's container inspection check sheets were amended to include confirmation that the above had been carried out prior to the loading of containers, irrespective of the type of product being loaded. See Pics 13, 14 and 15.



Pics 13, 14 and 15. Spot welding of bolts on the outside of purchased containers to enhance security and prevent bolts from being removed to gain entry to the containers.

The missing product was never recovered.

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