GUIDELINES FOR MULTISOURCING OF AUTOMATIC TWIST LOCK (ATL) DEVICES USED ON CONTAINER FLAT WAGONS ON IR

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Guidelines for Multisourcing of Automatic Twist Lock (ATL) devices used on container flat wagons on IR

Preamble:

The history of Container Locking devices on Indian Railways dates back to pre 1980s wherein BFKI Wagons were fitted with Retractable Anchor Locks to secure the Containers. Consequent to a 1994 World Bank loan, CONCOR, in its draft Technical Specifications for a Global Tender indicated amongst others a requirement of Locking devices to accommodate various combinations of ISO Containers. In the year 1996, a decision was taken by CONCOR to evaluate both Semiautomatic and Automatic Twist Lock devices for suitability of use in their proposed Container Flats. This was a significant departure for the then-current Retractable anchor locks that were used in BFKI Wagon. During the course of evaluation and development of this product, AAR M 952 – 88 Specifications were consulted and an AAR approved product of Ms Holland Co, USA was chosen for fitment on the Low Platform Container flat Wagons, the first order of which was executed by Ms HDC. In the prototyping stage of the Wagons both the options – Automatic Twist Lock and Semi automatic Twist Lock, were tested in accordance with a Test scheme evolved by RDSO derived on the lines of AAR M-952. In Sep, 1997, CONCOR chose the provision of Holland Co make Automatic Twist Locks over the Semi automatic Twist Lock, were tested in accordance with a Test scheme evolved by RDSO derived on the lines of AAR M -952. In Sep, 1997, CONCOR chose the provision of Holland Co make Automatic Twist Locks over the Semi automatic Twist Locks in its new Container Flat Wagons. The Drawing CONTR- 9405 – S/21, finalized in the year 1999, showed the Fitment details of the Automatic Twist Lock of Ms Holland Make. Since then, Automatic Twist Lock (ATL) devices are being used on Container Flat wagons of IR.

Under the aegis of MOUs between RDSO and RITES on the BLC Wagons, Ms RITES was carrying out the Vendor Approval for the Automatic Twist Locks for Application on Container Wagons. RDSO has been developing drawings for fitment of ATL’s based on manufacturers whose ATL’s have been tried. Until now, the container ATL’s have been to propriety design of M/s Holland, generally as per AAR-952 specifications. Trials with other AAR manufacturers like M/s Portec & M/s Celtec have been held in past. Trials with M/s Celtec coordinated by M/s RITES have been unsuccessful. In the year 2007, RITES accorded approval to one licensee of Ms Holland, ie Ms Sanrok Enterprises for supply of the Automatic Twist Locks. Based on the approvals from RITES, RDSO Wagon Dte has also advised the Zonal Railways about the approved Sources. Railway Board Vide Letter No 2006/M(N)/951/3 Dated 22/04/2010 advised all Zonal Railways to purchase the Twist Locks from Approved sources advised by RDSO, the same being a safety item. Subsequently, the item was taken by RDSO from RITES for multisourcing.

Container flat wagons on Indian Railway (IR) envisage usage of containers to the International ISO standards. The lashing/securing ATL devices for these containers have to be in line with International Railroad container transport norms. As such, the application of the ATL Devices on the Container flat Wagons derive their basis from the relevant Wagon Drawing, AAR Standards as also the ISO Container Standards.

With increased adoption & critical application of these Automatic Twist Lock (ATL) devices, there is an imperative need to examine the evaluation of new sources of this critical/safety component. Multiple sourcing of Automatic Twist Lock (ATL) devices is imperative to ensure ease of availability & cost effectiveness. However, it is important to underline that the
Automatic Twist Lock (ATL) devices are used at defined location on the wagons for holding containers with car body involving safety aspects from various points & hence a well defined, guidelines for multisourcing is essential. Since the location of these devices and dimensional aspects are controlled by various other factors (i.e. size of ISO containers, corner casting, location dimensions of the wagon etc.), it is equally important that product interchangeability is ensured (in a rake/unit of wagons), to avoid duplication of resources & avoidable inventory costs. Also, the ATL devices to be utilized on the Container Flat Wagons should be such that they can be fitted on the Wagons without involving any modification in the existing Wagons – which is again a cost.

ATL's are not covered under RDSO'S vendor list. However as a custodian of design of wagons and components with no production unit in place, the item, being a niche safety item, requires to be multisourced with due diligence. With a view towards the same, RDSO has developed these multisourcing guidelines to develop more sources for the Automatic Twistlocks and at the same time ensure that the product quality in terms of Safety requirements in the niche segment do not get compromised. These vendors may be considered by Railways/Container freight operators/ Wagon Manufacturers for procurement.

In more than 13 years of inception of the Container Flat Wagons, only one Source of ATL – Ms Holland (With one licencee) could be developed. There is therefore an imperative requirement to develop more sources. In view of the above, Zonal Railways, CTOs and Wagon manufacturers may also direct any potential source/ Vendor to RDSO at the earliest possible with / without their own assessment against these guidelines. Once adequate number of Sources are developed, the item shall be included in the RDSO Vendor Directory, with registration of sources.

This document details pertinent facts & requirements to be followed for the product development of Automatic Twist Lock (ATL) devices.

This document is summarized as under:

1. References to i) RDSO/RTES ‘Index’ drgs. of BLC & BLL wagons (ii) Specification of corner casting of ISO container (iii) AAR specification M-952 ; Intermodal Container support and securement system for freight cars, for Automatic Twist Lock (ATL) devices (Annexure-I).

2. The prospective vendors shall submit an application to ED/Wagon, RDSO requesting for being considered as a Source of Automatic Twist Lock (ATL) devices for use on container flat wagons of IR. The applications shall be considered complete only when accompanied with complete details/ documents as enumerated in Annexure-II.

3. The process to be followed for consideration as a Vendor for ATL is enumerated in Annexure-III.
Annexure-I

References

The fitment scheme on wagon, technical requirements, application details & performance parameters of the Automatic Twist Lock (ATL) devices used on container flat wagons of Indian Railways shall be as per the drawings & specifications referred below.

1. Drawings indicated in RDSO Index Drawing No CONTR-9405-S/1 (Latest Alteration) for BLCA Wagon & CONTR-9406-S/1 (Latest Alteration) for BLCB Wagon. (The relevant Drawings can be obtained from Wagon Directorate/RDSO on payment basis).
2. Drawings indicated in RITES Index Drg. No. – 45-A-2001-S/1 (Latest Alteration) for BLLA wagon & Drg. No. – 45-B-2001-S/1 (Latest Alteration) for BLLB wagon. (Can be obtained from RSD/RITES/Gurgaon on payment basis).
3. Mechanical characteristics, structural adequacy, and testing requirements for support and securement systems (Automatic Twist Locks) for intermodal containers on freight cars should be as per AAR specification “M-952 :2004 - Intermodal Container Support and Securement system for freight cars”
4. Systems approved under this specification will be compatible with containers per following Specifications:
   a. ISO 668:1995 (with amendment-2) Series 1 freight containers — Classification, dimensions and ratings.
## Annexure-II

**Details & Documents to be submitted by the Applicant**

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| 1     | The manufacturer (Indian or Foreign), in his proposal, should detail its Manufacturing plants, where the Automatic Twist Lock (ATL) devices detailed in Annexure-I, shall be manufactured.  
- Indian subsidiary/ Indian company, if any.  
- Appointed authorized Indian agent, if any.  
- Any company/ concern (Indian/ Foreign) to whom the manufacturer has outsourced manufacturing/ supply of Automatic Twist Lock (ATL) devices. | Details of the proposer (Manu./ Indian co./ Autho. Agent/ Outsourcing) be elaborated.  
- Relevant Product Pamphlet covering the Automatic Twist Lock (ATL) devices detailed in Annexure-I.  
- Authorization from OEM of Indian agent (if any) with validity date.  
- Details/ Authorization of the outsourcing (if any) & the source to whom outsourcing has been done. |
| 2     | The Manufacturer (Indian or Foreign) should meet **ALL** of the following qualifying conditions: | Documentary proof with details of customer name, order qty, year of supply & industry supplied-to as proof of supplying **Four thousand** such devices. |
| 2.1   | Should have supplied (at the time of applying to RDSO) at least Four thousand (4,000) ISO container lashing/locking devices(Manual/ Semi Automatic/ Automatic) for application in Transportation Industry (Rail-road /Marine) | Performance certification should be from customers that satisfy the following condition:  
- Satisfactory performance certificate from 3 past users amongst the ones detailed in documentary proof submitted against clause 2.1. Performance certification should be from customers to each of whom at least 500 ISO container lashing/locking devices have been supplied by the manufacturer in the past 5 years. |
| 2.2   | Should have certified “Satisfactory Performance” of ISO container lashing/locking devices(Manual/ Automatic/ Semi Automatic) from at least 3 past users. | Declaration in this respect & a copy of the Automatic Twist Lock (ATL) devices product catalogue of the manufacturer, as detailed in Annexure-I.  
In addition to the above, the proposer shall submit a certificate/ undertaking that  
**“Indian Railways shall not be responsible for infringement of Patent Rights arising due to similarity in design, manufacturing process, use of similar components in the design and development of this item and any other**
factor not mentioned herein which may cause such a dispute. The entire responsibility to settle any such disputes/ matters lies with the manufacturer / supplier. Details/ Design/ Documents given by them are not infringing any IPR and they are responsible in absolute and full measure instead of Railways for any such violations. Data, Specifications and other IP as generated out of interaction with the Railways shall not be unilaterally used without the consent of RDSO and the rights of Railways/ RDSO on such IP is acceptable to them”

<p>| 2.4 | The Automatic Twist Lock (ATL) devices (as in Annexure-I) should ideally be manufactured using in-house facilities (in one or more installations) by the manufacturer, to be elaborated by the applicant, as per point 1, above. However, the manufacturer could have tie-ups with other manufacturing set-ups for out-sourcing. In such a case, the quality control of the products has to be supervised by the manufacturer, proposing to supply Automatic Twist Lock (ATL) devices. Any outsourcing should be clearly detailed including all relevant details of the outsourcing contract &amp; the outsourcing partner. The instituted mechanism to ensure quality control should also be elaborately detailed. | Clear details with complete address, contact details &amp; contact person details of the facility/ facilities where the Automatic Twist Lock (ATL) shall be manufactured should be detailed. If the above details include a manufacturer from whom the Automatic Twist Lock (ATL) or any of its subassemblies are to out-sourced, complete details including details of the management/ ownership details with the source, identified for out sourcing, should be detailed. The mechanism, instituted to ensure quality control of the outsourced products, be elaborately detailed. |
| 2.5 | The manufacturer and outsourcing partner (if any) should have valid ISO-9000 certification for Automatic Twist Lock (ATL) production. | Copy of the ISO certificates, including that of the outsourcing partner, should be enclosed. |
| 2.6 | The Automatic Twist Lock (ATL) should conform to or exceed technical requirements detailed in Annexure-I. | Specific conformance to technical requirements detailed in Annexure-I should be forwarded by giving specific product values rather than a simple “Complies” or “Agreed to” remarks. |
| 2.7 | Certificate from AAR in compliance of M-952 for the proposed ATL. OR Test Reports of proposed ATL for compliance with AAR M-952 specification from any of the IACS or EMSA registered classification societies or from any Internationally accepted Railroad Testing facility for one or all clauses of AAR M -952. OR In case of being an approved vendor from RITES for supply of ATL | The Test reports should be submitted with the application along with the results of . • Exit &amp; Entrance Force Testing • Static tests. • Environment tests. • Impact Testing In case of AAR approval, the following shall be submitted along with the above: • AAR Observer Certification of Test Results, if applicable • Letter of Approval by AAR, if necessary |</p>
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<td><strong>devices to IR, complete documents including AAR approvals, Drawings, Test Certificates, approved QAPs from RITES etc.</strong></td>
<td>applicable</td>
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<td><strong>In case of RITES approval, all the details, as indicated shall be provided, along with the approval letters and Documents from Ms RITES.</strong></td>
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<td><strong>2.8 It should be clearly indicated whether the installation &amp; dismantling of the Automatic Twist Lock (ATL) is possible using any standard/special type/make of installation equipment. If it involves any special tools, will they be provided free with given lot size or have to be procured separately? The manufacturer will supply the detailed procedure for installation &amp; dismantling of ATL devices on wagon and use of any sealant, oil, packing item etc.</strong></td>
<td><strong>A write up in this respect shall be furnished by the Applicant covering all the aspects outlined. Any particular fastener torquing values and special equipment used for the same should be detailed.</strong></td>
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<td><strong>3 The Manufacturer proposing for product development should forward a undertaking that they agree to follow &amp; abide by the product development process detailed in Annexure-III.</strong></td>
<td><strong>An undertaking in this respect should be included.</strong></td>
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<td><strong>4 The Manufacturer proposing for product development should forward a undertaking that they agree to follow &amp; abide by the standard conditions of IRS contract for proposed Automatic Twist Lock (ATL).</strong></td>
<td><strong>An undertaking in this respect should be included.</strong></td>
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| **5 **Product Samples:**  
As a proof of product realization by the proposer, the application for product development should be accompanied by samples of Automatic Twist Lock (ATL) manufactured by the applicant with a due marking/stamping of the manufacturer’s name, Model No. & Month/Year of manufacture.** | **Min 1 sample of assembled Automatic Twist Lock (ATL) and One quarter cut model should be included along with the application. Each sample should be individually sealed, with the top cover identifying the component.** |
| **6 **Product Warranty** | **The applicant should confirm a warranty/guarantee of a minimum 48 months from the date of manufacture or 42 months from date of fitment, whichever is earlier.** |
Annexure-III

The Process of Vendor Development of Automatic Twist Lock (ATL) Devices

1. The application for Vendor development, shall be considered complete, only after all documents/ details & product samples enumerated in Annexure-II have been received in RDSO. Any gaps/ details should be satisfactorily complied by the applicant, before the process is taken forward. The onus of complying with the complete documentation shall lie with the applicant.

2. If the applicant is found complete in all respects, the proposal shall be forwarded to EDSW for preliminary approval to process the case forward. The applicant shall be informed accordingly.

3. Upon the preliminary approval, the applicant shall submit the detailed drawings & Quality Assurance Plan (QAP) of the product to Wagon Directorate. RDSO will check the suitability of the concept design with respect to IR standards including Quality Control, dimensional clearance and acceptance from ISO Containers etc. point of view. If the design is found to be unsuitable, the proposer shall be given opportunity to present his case to RDSO, within 30 days of the issue of the same from RDSO. If the proposer fails to give satisfactory explanation of the deficiencies, then the proposed design shall be summarily rejected. In case of resubmission, if it is found that there is a significant departure in the product functionality and safety that would have an impact on the parameters of the earlier conformance of AAR – M 952, retesting and certification, as pointed out in clause 2.7 of Annexure II, shall have to be carried out by the proposer. Decision of EDSW in such a case shall be final.

4. If the drawings & QAP are found in order, the case shall be put up to EDSW, who shall nominate officials for the QAP verification and capability cum capacity assessment to the firm premises. If the manufacturing of Automatic Twist Lock (ATL), as detailed in Annexure-I, is done at different sites, each of these sites shall be inspected to ascertain manufacturing facilities & product conformance. In case the manufacturing is out-sourced, the source where the actual manufacturing, is being done, shall be inspected.

5. The nominated officials shall submit the report based on which the decision for approval & initiating product trials, which shall be put up to EDSW for approval. In case of approval, the QAP of the product shall be stamped by RDSO and a copy of the same shall be given to the Applicant.

6. After approval of EDSW, the applicant shall be advised to supply 45 wagon sets (one rake of BLC wagon) of Automatic Twist Lock (ATL), to Wagon manufacturers for Limited Field Trials. The order processing & contract formalities for these Automatic Twist Lock (ATL) shall rest with the Wagon manufacturer(s)/Wagon purchaser/ATL purchaser & the Applicant.
7. The installation of these Automatic Twist Locks (ATL) shall be done to the satisfaction of the applicant & should be supervised by a representative of the applicant at the Wagon Manufacturer’s works. The applicant & the Purchaser shall co-ordinate this installation. The applicant & the Purchaser shall jointly certify satisfactory fitment of Automatic Twist Lock (ATL) & forward details of the wagons, fitted with the supplied Automatic Twist Lock (ATL) to RDSO.

8. One unit fitted with proposed ATL will be subjected to testing as per a suitable Test Scheme, evolved by RDSO, prior to field trial.

9. A lay-over period of 6 months (after the date of last fitment of trial Automatic Twist Lock (ATL) on the one rake of BLC wagon (of 45 wagons) shall be given before ascertaining Limited Field Trial performance of the installed Automatic Twist Lock (ATL). After the 6 months period, any 5 wagons (out of the first rake of 45 wagons), on which Automatic Twist Lock (ATL) installation has been confirmed shall be randomly chosen & the wagons monitored for ANY failure of the applied Automatic Twist Lock (ATL). A joint report prepared on the Automatic Twist Lock (ATL) performance in the inspected 5 wagons by Zonal Railway Wagon depot personnel, Wagon Owner CTO’s representative & RDSO’s representative.

10. NO failures of any of the applied Automatic Twist Lock (ATL) should have taken place, in these randomly chosen 5 sample wagons. Since the installation has been done to the satisfaction of the applicant, failures, if any, cannot be attributed to incorrect fitment.

11. Based on the successful performance as per point no. 9 and 10 above, approval of ATL shall be given for extended Field Trials of the product. However, the same shall be limited to a total of 4 BLC Rake equivalents of Automatic Twist Locks. These 4 Rake equivalents along with the earlier fitted 1 rake equivalent of ATLs shall be monitored by the Base Railway Depot, and the CTO for the service failures and the report of the same shall be supplied to EDSW/ RDSO. When all the 5 Rake equivalents of the BLC Wagons, as outlined above have completed at least one and half years of service, at least 5 Cars shall be inspected by the representative of the Wagon owner CTO, Base Railway Depot and RDSO representatives, as nominated by EDSW. If the condition of the support and securities system (ATL) is found satisfactory, approval of the system can be granted.

12. Further to the above (Point 11 above) being successfully complied, RDSO shall communicate the status of the Vendor as an “approved source” to ZR/ Wagon manufacturers. Other issues pertinent to a purchase contract- purchase desc/p art nos, cost, production capacities, conditions of contract, warranty/guarantee, supply period & others shall be looked-into by the respective purchaser directly.

13. The product and the Vendor shall continue to be as a “Developed source” till such time there is no change in the approved QAP and the approved Drawings of the Product. Any change in the QAP and the “Drawings” of the product brought forward by the “Developed source” shall be got ratified from RDSO, which shall decide the further course of action to be taken as regards the necessity of Testing, based on the amount and nature of the Technical changes in the product.
14. In case of a subsequent failure report from the field, or for any other pertinent reason RDSO reserves the right to initiate fresh development process/ initiate any corrective action as deemed fit to ensure product performance, that could include delisting of the source for a period of not less than 6 Months. However, in such cases of potential delisting, the firm shall be given an opportunity to defend its case before a decision in the matter is taken. In such cases of delisting, the delisted source shall have to apply afresh under the Multisourcing guidelines duly bringing about the changes in the product that have been brought about to improve the performance.

15. In case, a manufacturer (approved or under development) alters/changes the place of manufacturing of Automatic Twist Lock (ATL) (as specified in Annexure-I), the new site would have to be inspected & the product conformance certified by the inspecting agency, as detailed in point 4, above.

16. Zonal Railways, CTOs and Wagon Builders shall, from time to time, advise or direct any new sources of ATLs to RDSO for ratification with/without their own scrutiny under these Multisourcing Guidelines.

Note:

1. Proposer of ATL will have to submit to RDSO the detailed “Maintenance instructions for field/repair depot staffs after passing the stage of Clause 6 of Annexure III. The repair procedure should include the items to be retained/replaced during routine/periodic maintenance.

2. Vendors, already approved by RITES, shall continue as a “known source” for the ATLs. However, they shall, within not more than six months from the date of issue of these guidelines, apply to RDSO Wagon Dte, showing compliance of these guidelines. However, in such a case, field trials and extended field trials shall not be necessary and their status shall be confirmed as a “Developed source” based on the papers submitted, their compliance to these guidelines and Field performance reports.

3. The ATLs shall be included in the RDSO Vendor Directory after adequate number of sources have been developed.