

Registration of Rolling Stock

ERP-31-01

Applicability

Network Wide

Publication Requirement

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1 Introduction

1.1 Purpose

The purpose of registering new or modified rolling stock is to collect information to ensure compatibility with ARTC's Interface standards. ARTC has established interface requirements for the operation of vehicles and train configurations on the ARTC Network. This procedure establishes a formal process for the registration of new, modified or transfer of ownership of rolling stock for operation on the ARTC Network.

1.2 Scope

This procedure applies to the registration of any new, modified existing, or transfer of ownership of rolling stock intended for operation on the ARTC Network. Refer to section 2.3 for details relating to the scope of modifications that require updated registration. This process excludes registration of locomotives with any state EPA requirements. Where appropriate, operators must seek this registration directly with the EPA.

For registration of all track maintenance vehicles such as Road-Rail and Rail Bound Track Machines (i.e. tampers and regulators) refer to *EPP-32-01 Track Maintenance Vehicle Registration and Operation*. This process excludes federal, and state based WH&S regulations.

1.3 Procedure owner

The Manager Engineering Services is the procedure owner and is the initial point of contact for all queries relating to this procedure. Any queries on this procedure can be directed to standards@artc.com.au.

1.4 Responsibilities

The Principal Rolling Stock Interface Engineer is responsible for the review and registration of rolling stock on the ARTC Network.

Rolling stock owner/operators are responsible for assessing freight rolling stock for compatibility to the ARTC Network and compliance with all relevant standards throughout the rolling stock's lifecycle.

1.5 Reference documents

The following documents support this procedure:

- ARTC – Route Access Standard (including the Section Pages and Appendices)
- ESS-32-01 – Rolling Stock Signalling Interface
- EPP-32-01 – Track Maintenance Vehicle Registration and Operation
- ARTC Rolling Stock standards as identified with the document identification prefixes of WOS*, ERP* or ERD*.
- RISSB – AS7500 Series of Rolling Stock Standards, Codes of Practice and Guidelines
- AS 7531 Lighting and Visibility
- AS1100 Technical Drawing
- ENV-PR-004 Environmental Management Plan for Operators on the ARTC Network

- ARTC NSW EPA Licence 3142 and SA Environmental Authorisation 10555

*Note: ARTC is in the process of transitioning to a new document identification system. As such the “WOS” series of Rolling Stock standards will be superseded by the new “ERP” series of documents.

1.6 Definitions

The following terms and acronyms are used within this document:

Term or acronym	Description
AEI	Automatic Equipment Identification
Disposal	The process of deactivating rolling stock from operation for the purposes of scrapping, long term storage for non-operational purposes, or sale to a non-operational organisation (i.e. museum)
EPA	Environment Protection Authority
EPL	Environment Protection License
ICP	Independent Competent Person (Refer AS7501)
Owner/Operator	Owner: the company that will own the rolling stock Operator: The company that will operate the vehicle
Railworthy	The rolling stock complies with the relevant standards. Maintenance of the rolling stock, plant and equipment complies with the relevant standards. Evidence of the compliance with the relevant standards should be available.
RAS	ARTC Route Access Standard
RISSB	Rail Industry Safety Standards Board (mainly AS 7500 series of documents)
Rolling Stock Class Code	A class of rolling stock is a group of vehicles with the same functional and operational details/features that are allocated a codified ID based on a Vehicle Classification System. Refer to AS7503 Appendix A for an example Vehicle Classification System.
Rolling Stock Design Type	A design type is a group of vehicles that are indistinguishable when assessed for compliance with all applicable functional and operational requirements. (For example, one design type of vehicle which may be coded differently by two vehicle owners as two individual rolling stock class codes).
Vehicle Number	Unique number of the vehicle within the class (may also be known as the “running Number”)
RSO	Rolling Stock Operator as defined by the Rail Safety Act
VREG	ARTC’s Vehicle Registration System and Database

2 Registration and Warranty

2.1 Registration requirements general

Owner / Operators seeking registration shall do so by submitting:

- *ERP3101F-01 - Registration of Rolling Stock and Warranty Declaration,*
- the associated form ERP3101F-02 through F-05 vehicle information packs, or forms F-06 and F-07 for additional vehicles being added to a class / transfer of ownership.
- Provision of supporting evidence as required.

All submissions shall be submitted to opstandards@artc.com.au. All non-operator vehicle submissions shall be supported by an accredited Rolling Stock Operator (RSO).

The completed registration application with supporting documentation shall be submitted allowing a minimum of 30 business days (approx. 6 weeks) for any rolling stock assessment. Vehicles seeking signal compatibility or with non-compliances shall allow a minimum of 60 business days (approx. 12 weeks) for assessment.

Interim registrations for testing shall follow the process as defined in section 2.5. Vehicles seeking initial movement for the purposes of transit shall follow the process as defined in section 2.6.

Refer to figure 1 for the flow chart of the application process for new or modified rolling stock seeking to operate on the ARTC Network.

2.2 Registration Application Forms

The following forms are applicable for registering rolling stock:

Form No	Form Title
ERP3101F-01	Registration of Rolling Stock Declaration
ERP3101F-02	Registration of New or Modified Locomotives
ERP3101F-03	Registration of New or Modified Freight Wagons
ERP3101F-04	Registration of New or Modified Hauled Passenger Vehicles
ERP3101F-05	Registration of New or Modified Self-Propelled & DMU Passenger Vehicles
ERP3101F-06	Registration of Additional Vehicles to a Class
ERP3101F-07	Transfer of Ownership of Rolling Stock
ERP3101F-08	Rolling Stock Disposal Notification

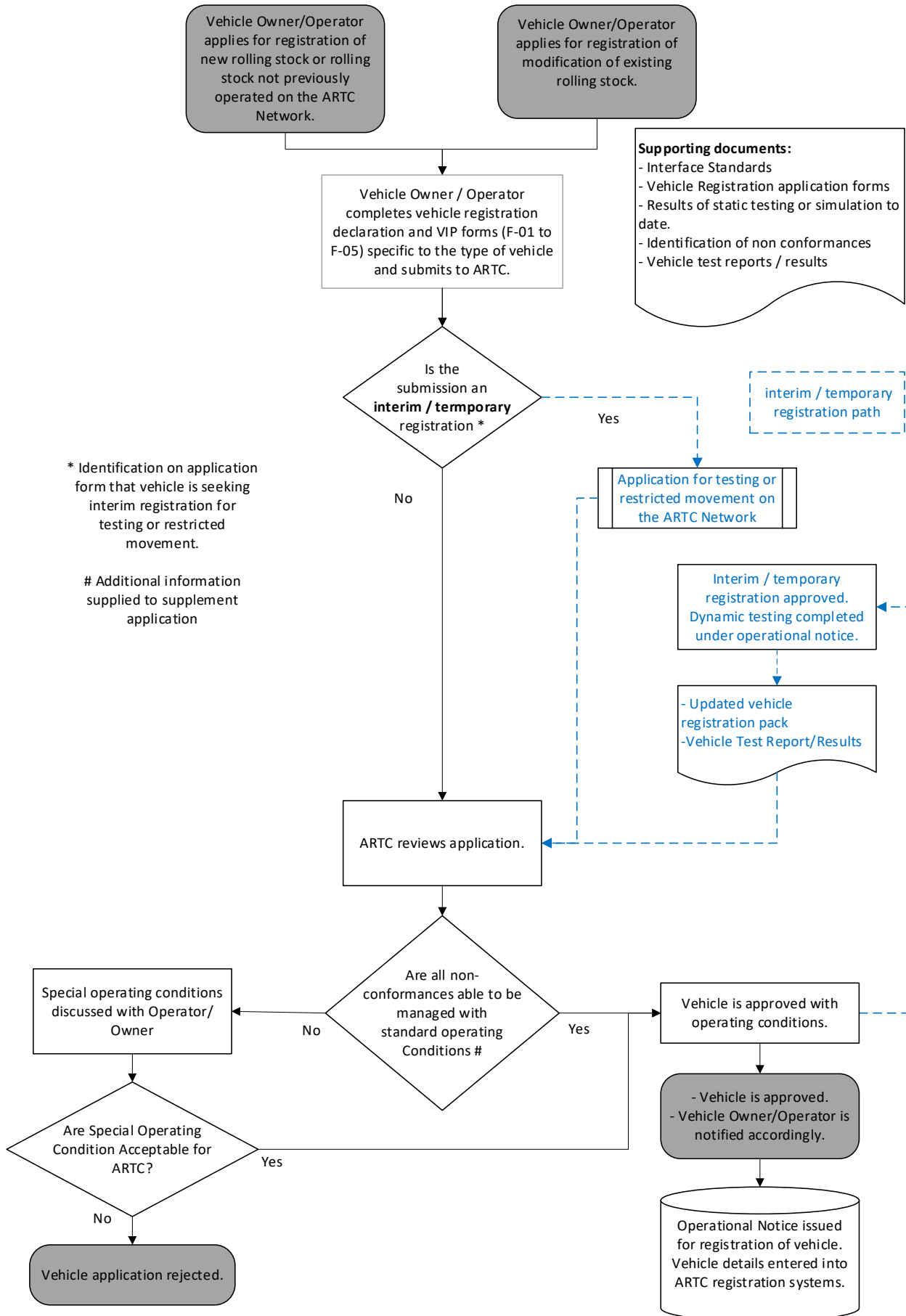


Figure 1 - Application process for new or modified rolling stock seeking to operate on the ARTC Network.

2.3 Initial registration of new rolling stock on the ARTC Network

The owner/operator shall check that the Rolling Stock Class Code for each vehicle class is unique and follows the classification code naming convention as per *AS 7503 Rail Vehicle Identification and Markings*.

The rolling stock shall be assessed to conform with one or more of the following standards:

- ARTC Rolling Stock standards as identified with the document identification prefixes of WOS, ERP or ERD.
- The AS7500 series of Rolling Stock Standards, Codes of Practices and Guidelines.
- Demonstrated equivalent overseas rolling stock standard, subject to acceptance by ARTC.
- The design shall also conform to the interface requirements specified in the ARTC Route Access Standard (RAS).
- *ENV-PR-004 Environmental Management Plan for Operators on the ARTC Network*.

Vehicles that are seeking to operate under signalling authorities on the ARTC Network shall also submit a completed form ESS3201F-01 Rolling Stock Signalling Interface Compliance Certificate along with supporting documentation to demonstrate the vehicles compliance with the ARTC signalling system in accordance with ESS-32-01 – Rolling Stock Signalling Interface.

Vehicles operating in NSW and SA require EPA licences. New and substantially modified locomotives seeking operation on the NSW rail network must seek EPA approval in accordance with their Environment Protection Licence (EPL).

Within the registration forms, vehicle configuration diagrams are referred, these are illustrated in Appendix A.2

2.4 Existing Rolling Stock

Existing rolling stock shall be maintained to comply with all ARTC rolling stock interface standards as identified with the document identification prefixes of WOS, ERP or ERD for the whole vehicle life cycle.

2.5 Modification to approved design type

Any vehicle which has undergone modifications as defined below shall be reassessed against the acceptance standards as per clause 2.2. Appendix A.1 Table A.1 provides a matrix of guidelines for the types of modifications and expected tests for that type of modification to support the registration.

Modified vehicle examples include, but are not limited to:

1. Vehicles modified to accommodate their use for a different purpose.
2. Vehicles undergoing major refurbishment with updated equipment which alters the braking, traction or suspension systems which have the potential to alter performance.
3. Vehicles with equipment removed or added resulting in a redistribution of vehicle mass that could alter the vehicle performance.
4. Vehicles modified such that it may be incompatible with the infrastructure.

Any modification that amends the key parameters or operating conditions of a vehicle, such as but not limited to an increase in speed, operating mass, size and dimensions.

Any modification that alters the compliance of the vehicle to the listed Rolling Stock Standards in section 2.2 including changing compliance from a legacy requirement to a requirement to a currently acknowledged Rolling Stock Standard

For modified vehicle registration applications, it is not necessary to complete the application form for all sections, only the applicable fields where modifications are applicable shall be filled along with relevant supporting documentation.

In NSW, the rolling stock operator should ensure that modified rolling stock is operated and approved (as applicable) in accordance with their EPL.

2.6 Interim registration submissions for testing purposes

Vehicles that are being submitted for interim registration for the purposes of testing should complete an applicable registration form checking the box "Interim Registration for testing purposes". The form shall provide as much information as possible to support and certify that the vehicle is fit for the purposes of testing and in a railworthy condition before testing is considered on the ARTC Network. The sequence of testing as defined in AS7501 should be applied for preparation for dynamic testing.

2.7 Temporary approval of vehicles for movement on the ARTC Network

The process as defined above in section 2.5 shall be applied initially.

Temporary registration for the purpose of the following scenarios may gain interim registration for the following operational movements:

- Initial arrival of vehicles at port transitioning to facilities,
- Vehicle movements to locations in preparation for testing,
- Prototype operations under test before final configuration,
- Transfer movements of vehicles that are not intended for standard operation and will be deactivated on arrival. (Note: Vehicles that have previously been registered with ARTC and have been delisted from registration processes may by-pass the process listed in section 2.5 at the discretion of ARTC.)

The following requirements apply for the restricted movement of vehicles on the ARTC Network until the appropriate dynamic tests for each vehicle type, or final registration has been completed and accepted:

- Self-propelled vehicles shall be locomotive hauled dead attached.
- The maximum speed for the movement shall not exceed 70% of the maximum designed operating speed for the vehicle up to a maximum speed of 80km/h at the discretion of ARTC.
- ARTC may apply additional operating conditions to manage identified risks for restricted operation until dynamic testing and /or review of registration is completed.

- For non-operational vehicles, the vehicles will be deactivated at the end of the movement and may require additional inspections along the route based on any risks identified.

Before any movement of a vehicle on the ARTC Network, an ARTC Operational Notice will be issued identifying the vehicle class and operating conditions applicable.

2.8 Supporting Documentation

Where listed in the vehicle information packs seeking supporting documentation for evidence of compliance, the document shall clearly list the vehicle class identification and a document number and revisions information.

All documentation shall not be password / print protected or have expiry access dates for ongoing ability to reference the document. Where related documents become inaccessible this may result in deregistration processes if this cannot be resolved.

2.9 General Arrangement Drawing

Vehicle general arrangement drawings shall show as a minimum the following where applicable that refer either directly or indirectly to a common datum.

- All dimensions should be referenced from top of rail and track centre where applicable.
- Vehicle dimensions – dimensioning in specifically end and side view and top view if specific detail is required to be illustrated.
 - Dimensions on static outline key parameters
 - Which rolling stock outline the vehicle is compliant
 - Dimensions for frangible items (e.g. Mirrors, antennas, etc)
 - Where tapered, dimensions from key datum points
- Bogie centre / bogie pivot centre.
- Axle Spacings (and if applicable the vehicle wheelbase)
- Axle Load for each axle (tare and maximum condition)
- Maximum fully provisioned axle loadings
- Length over coupling centrelines
- Length over headstocks / vehicle body
- Layout of any internal doors and external door positions, and access points (emergency access and egress points where applicable)
- Floor height dimensions (passenger and locomotive)
- Deck height and container mounting dimensions
- Coupler height mid-point
- For multipack vehicles (including bar coupled and articulated wagons), arrangement showing overall vehicle dimensions and interconnections.
- AS1100 Technical Drawing compliance for title block details.

2.10 Non-Compliances

Where non compliances have been identified these shall be listed on each vehicle information pack within the relevant section. This is inclusive of non-compliances with standard operating conditions and pre-existing concessions (e.g. the use of a third driver for signal sighting distances, etc).

The referenced clause of the VIP form shall be noted and any proposed controls or previously submitted concession shall be referenced for each non-compliance.

2.11 Independent Competent Person

Any party that has been engaged as an Independent Competent Person (ICP) shall meet the requirements and undertake responsibilities as per AS7501 Rolling Stock Compliance Certification. The ICP engaged shall be competent in the interpretation of the ARTC Network operational and interface requirements.

2.12 ARTC Review of Registration of Rolling Stock

ARTC will review new or modified vehicle submissions and may apply operating conditions to ensure compatibility with the ARTC Route Access Standard, Rolling Stock Interface Standards and the ARTC Network Rules & Procedures where applicable. ARTC reserves the right to reject applications, or apply operating conditions where necessary, if the vehicle is found to be incompatible with the ARTC Route Access Standard, Rolling Stock Interface Standards and the ARTC Network Rules & Procedures.

Upon assessment ARTC may implement operating restrictions on the rolling stock for operation on the ARTC Network in consultation with the Operator /Owner.

Following review of rolling stock applications, the class will be registered with ARTC as per Section 4 of this procedure.

2.13 Registration of Additional Vehicles to a Class

Vehicle Owner / Operators are permitted to add additional vehicles to the class of rolling stock if the additional vehicles are of the same Rolling Stock Design Type. If not, the variation/alterations shall consider the Vehicle Modification requirements in section 2.4 to capture the relevant changes from the established Rolling Stock Design Type. All variances shall be identified and provided to ARTC for assessment of the application, which may identify that for compliance with AS7503, the vehicles are required to be registered as a different vehicle class.

Owners shall register additional vehicles through the submission of form *ERP3101F-06 Registration of Additional Vehicles to a Class*. Each form may include multiple vehicles but can only include one vehicle class.

2.14 Transfer of Ownership of Rolling Stock

Owners / Operators of vehicles are to advise of change of ownership of rolling stock through notification to ARTC using Form *ERP3101F-07 Transfer of Ownership of Rolling Stock*. At this time ARTC should be notified of intention to rename the Rolling Stock Class Code and confirm that the vehicles will not be modified from initial registration.

Submission of the transfer of ownership is incumbent on the new owner, a notification of transfer from the previous owner will not result in the ownership being transferred to the purchaser.

2.14.1 Updating Rolling Stock Class Code:

Transfer of ownership should reflect the ownership vehicle class code in accordance with AS7503.

2.14.2 Transfer of Ownership of Locomotives and Self-Propelled & DMU Passenger Vehicles

When transferring ownership of locomotives and self-propelled and DMU passenger vehicles, the new owner should be given a copy of all Rolling Stock Interface testing documentation (including signalling compliance). ARTC may require the new owner to present these documents to support new areas of operation and if unavailable to support new areas of operation, ARTC may apply additional operating conditions to the vehicle class.

An individual form shall be submitted for transfer of ownership of each locomotive class or self-propelled passenger and DMU vehicles due to additional questions for that vehicle type.

In NSW, transfer of ownership that results in a change to the class designation of a locomotive must be notified to the EPA in accordance with the requirements of the rolling stock operator's EPL.

If livery and lighting are to be modified, these shall be made compliant with AS 7531 Lighting and Visibility. The Owner / Operator shall be aware that if the livery and lighting is presently non-compliant to AS7531, that operational conditions may be applied to operations.

2.15 Rolling Stock Disposal Notification

Registered rolling stock that is being disposed of for non-operational purposes shall be notified to ARTC for removal from the operational rolling stock registration and deactivated. Notification shall be submitted on form ERP3101F-08 - Rolling Stock Disposal Notification.

It is the RSO's responsibility to ensure that if that rolling stock is disposed of to a non-operational entity (i.e. rail heritage museum) that that entity is aware that the rolling stock registration will be deactivated from operation and if seeking to be operated in the future that organisation will need to re-register that vehicle in line with this process.

In disposing of rolling stock as in different means, i.e. some scrapped and some donated to another organisation for non-operational purposes, an individual form for each means shall be submitted for relevant disposal purposes. (one form for multiple classes for that disposal means may be submitted).

3 Rolling Stock Registration and Operational Records

Existing, new and modified rolling stock will be listed in ARTC's operational systems such as VREG, DTPOS and RAMS, recording key attributes, operation parameters and operating conditions.

All registered vehicles will be listed in TOC Waivers or Route Access Condition Notices until the implementation of the ARTC Route Access Standard: Appendix C – Rolling Stock Data.

Only ARTC registration system administrators can modify class information in the Vehicle Registers.

Appendix A.1 Vehicle Modification Matrices

When compared to existing Complying Rolling Stock, does the Modified Rolling Stock have a:	STATIC TESTS							DYNAMIC TESTS						
	Static Rolling Stock Outline Test	Measured Vehicle Mass Test	P2 Force Assessment	Static vehicle twist test	Static vehicle/bogie swing test	P/D Ratio	Static vehicle/vehicle swing test	ARTC Bridge assessment	Brake test including NBR	Ride performance test	Park Brake performance test	Kinematic rolling stock outline test	Environmental tests	
Lighter tare mass?	✓	✓		✓		✓			✓	✓				
Heavier tare mass?		✓	✓			✓		✓	✓		♦	♦		
Increased gross mass?	✓		✓			✓		✓	✓		✓	✓		
Higher or more off-centre Centre of Gravity?				✓						✓		✓		
More torsionally rigid underframe?				✓						♦			♦	
Change in Vehicle length?	✓	✓		✓	✓		✓	✓		✓		♦		
Different coupler length or different spacing between or drawbar pins?		♦		♦	×		✓						♦	
Intended to operate at a higher speed?			♦						♦	✓		✓	✓	
Change in spring rate?				✓	✓				♦	✓	♦	♦	♦	
Change in bogie damping?				✓						✓		✓	♦	
Change to centre bearing design?	♦			✓	♦					✓	♦	✓		
Modified constant contact side bearers?				✓	♦					✓		✓	♦	
Change to clearance of gapped side bearers?				✓	✓					♦		✓		
Smaller wheel diameter?	✓	✓	✓		✓	✓	♦		♦	♦	♦	♦	♦	
Larger wheel diameter?	✓	✓	♦	♦	✓	♦			✓	✓	✓			
Change to air brake system?									✓		♦			
Change to park brake?	♦										✓			
Larger Rolling Stock outline?	✓	♦			♦		✓					✓		
Additional body features?	✓	♦		♦	♦		✓					✓		

♦ may be required in some cases