

**AUSTRALIAN ASSOCIATION OF LIVE STEAMERS**

**CODE OF PRACTICE FOR THE OPERATION OF MINIATURE  
RAILWAYS, ROAD VEHICLES AND PLANT**

**SECTION A**

**APRIL 1999**

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AUSTRALIAN ASSOCIATION OF LIVE STEAMERS.  
CODE OF PRACTICE FOR THE OPERATION OF MINIATURE RAILWAYS, ROAD VEHICLES AND  
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**AMENDMENTS**

<b>Amendment No.</b>	<b>Paragraph No.</b>	<b>Amended By</b>	<b>Date</b>
1	Re wording of clause 8.5 page A 15		August 1999
2	Re wording of clause 1.3.10 page A 11		June 2002
3	Delete "Fine Scale Track" Dimensions –Appendix 5 page A32		AGM 2000
4	Redraft whole of Clause 9 page A16		AGM 2003
5	Rewording of Clause 1.3.20 page 12.		AGM 2003
6	Delete Clause 1.1.3		AGM 2006
7	Corrections to Appendix 5, 9.12 added.		April 2007

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**PREFACE.**

Reprinted in 1999 to improve readability, correct and update the text to include up to amendment No 35 and changes made at April 1998 and April 1999 conventions.

This manual has been compiled by the Australian Association of Live Steamers for use by Affiliated Societies so that a minimum standard of competency can be achieved by their Society Members.

By adopting the requirements and procedures outlined in this code the Association and its Affiliated Societies recognise their obligation to provide a safe environment for visiting public and members alike which will be engendered at the many operating locations throughout the Commonwealth.

**1999 Committee.**

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## 1. GENERAL.

### 1.1 Scope.

- 1.1.1 This code of practice is intended to cover minimum safe operating requirements of affiliated societies operating miniature railways of gauges between 32mm (1 ¼ “) and 204mm (8”), operating at a speed not exceeding 20 km/h, road vehicles and plant, as non-commercial hobby operations.
- 1.1.2 This code is in accordance with the Aims and Objects as detailed in the of the Australian Association of Live Steamers Constitution.
- 1.1.3 Deleted AGM 2006

### 1.2 Purpose.

- 1.2.1 The purpose of this code is to enable Societies to fulfil the requirements of the Amusement Devices/Structures Regulations within the various States of the Commonwealth of Australia and detail the differences between commercial and non-commercial hobby type operations not found in the Standards Association of Australia, Australian Standard 3533 - 1997 (AS 3533) Amusement Rides and Devices - Section 4.2 TRAINS.
- 1.2.2 The aim of this code is to provide a standard operating basis, acceptable to various State Statutory Authorities and in line with SAA Australian Standard for Amusement Rides and Devices, in order to allow free movement by members of societies for the purpose of operating their various equipment throughout the Commonwealth.
- 1.2.3 It is recognised that the requirements for statutory inspection and registration differ from State to State and may vary or add to the requirements of this Code.
- 1.2.4 This Code is not intended to be the cause of stifling useful development, new ideas will always be considered and amendments issued from time to time.

### 1.3 Definitions.

- 1.3.1 *Light Engine*:- shall be defined as a Locomotive with Operator riding upon or in the Locomotive, or a Locomotive with Driving Truck or Driving Carriage attached, the Operator only riding thereon.
- 1.3.2 *Driving Truck*:- shall be defined as a carriage used for the express purpose of carrying an Operator only in order to operate a Locomotive. Such carriage shall be positively coupled to the locomotive and the locomotive or the carriage shall be fitted with an effective brake.
- 1.3.3 *Driving Carriage*:- shall be defined as a carriage that is designed to carry a number of persons who may comprise a combination of Operator, Trainee operator or Public passengers. Such carriage shall be positively coupled to the locomotive and the locomotive or carriage shall be fitted with an effective brake.
- 1.3.4 *Scale Type Rollingstock (Non-Riding)*:- shall be defined as miniature versions of full size rail-way rolling stock not designed to carry public passengers.

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- 1.3.5 *Public Passenger Carriages*:- shall be defined as a carriage for carrying members of the public.
- 1.3.6 *Safe Working Procedures*:- shall be defined as a system devised for the safe passage of trains over the track system and shall include signalling, training of Operators and Attendants and adequate control of the public.
- 1.3.7 *Amusement Device/Structure*:- shall be defined as a Device/Structure that is operated for hire or reward and is intended to carry members of the public for their entertainment or amusement.
- 1.3.8 *Non-Commercial Hobby Society*:- shall be defined as those groups of people who have joined together for a common purpose and who are not established to, and do not, make a profit for their members. Funds that are accumulated by the organisation are used to further its objects rather than to better the financial position of its members.
- 1.3.9 *Engine*:- shall be defined as the prime mover.
- 1.3.10 *Locomotive*:- shall be defined as an Engine, Tender, Tank Engine, Non-Steam Engine and any attached driving truck or carriage.
- 1.3.11 *Stationary Boilers*:- shall be defined as Locomotives for purpose of Section 4 below.
- 1.3.12 *Hobby Miniature Railway*:- shall be defined as Trains operating on a track gauge of between 32mm (1 1/4") and 204mm (8") and operated by Non-Commercial Hobby Societies within the scope of the Australian Association of Live Steamers Constitution.
- 1.3.13 *Train*:- shall be defined as a Locomotive hauling a set of Public Passenger Carriages and/or Scale Type Rollingstock (Non-Riding).
- 1.3.14 *Miniature Road Vehicle*:- shall be defined as a vehicle of scale proportions powered by any external or internal fuel source and not restricted to a track in its operations.
- 1.3.15 *Plant*:- Shall be defined as any machinery, equipment, appliance, implement and tool, any component thereof and anything fitted connected or appertaining thereof.
- 1.3.16 *Operator*:- shall be a suitable person aged a minimum of 15 years who has primary control of a train power device. Operators 15 years to 17 years of age shall be under direct supervision of a competent person 18 years of age or over.

**Note:** In order to be more specific, in certain areas the term *Driver* is used in lieu of *operator*.

- 1.3.17 *Attendant*:- shall be a suitably trained person aged a minimum of 15 years who acts as a guard, station master, station assistant, signalman or any other person who carries out any other function or activity necessary for or which contributes to the safe operation of a Miniature Railway.
- 1.3.18 *Internal Registration*:- shall be defined as the procedures adopted by Societies to record equipment belonging to the society and its members.
- 1.3.19 *Competent Person*:- means a person whom the Society ensures has acquired, through a combination of training, education and experience, knowledge and skills enabling that person to correctly perform a specified task.

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1.3.20 *Direct Supervision*:- means supervision by a competent person, 18 years of age or older, who will be in such a position that he/she can immediately take control in the event of an emergency. i.e. riding immediately behind the operator or walking alongside.

1.3.21 *Hazard*:- means the potential to cause harm to health and safety of persons within the Society environs.

1.3.22 *Risk*:- means the probability of persons in the Society environs being harmed by a hazard.

1.3.23 *Cut Out Device*:- shall be a suitable device, when operated, will render the locomotive or equipment inoperable.

1.3.24 In the interpretation of this code, the word 'SHALL' is to be understood as being mandatory; 'SHOULD' is advisory.

## 2. REGISTRATION.

*NOTE:* Due to changes in Work, Health and Safety legislation by various States, some States may not require Registration or an annual inspection of equipment etc. The Association recommends that where such changes have been made that societies continue to carry out inspections and safety checks as applies prior to the changes in legislation and in any case no greater period than two years.

2.1 Non-commercial hobby clubs within the scope of the Australian Association of Live Steamers Constitution, operating trains and rides for the public hire or reward shall be registered as an amusement device/structure as required by State Statutory Authorities. Hobby societies operating trains and rides for private use only, may be exempt registration in some states.

2.2 Each Amusement Device/Structure shall consist of two basic components:

2.2.1 Fixed components consisting of track, bridges, support structures, signals, fencing and tunnels plus any other items of a permanent nature relating to the track and its public operation.

2.2.2 Transportable components consisting of locomotives, public passengers carriages, driving trucks and scale type rolling stock (non-riding).

2.3 Driving trucks & scale type rolling stock (non-riding), are not considered to be required to be registered with the State Authority. Scale type rolling stock of 7¼ inch gauge or larger and of significant mass and used concurrently on the same track as public running shall be safe for operation in accordance with the requirements of 2.6 below.

2.4 Transportable items of non-commercial hobby miniature railways registered with a State Authority and operating under this code shall be acceptable for operation on similar railways within the State of registration and elsewhere in the Commonwealth of Australia.

2.5 Locomotives are not considered to be required to be registered with the State Authority

2.6 All items of locomotives and rolling stock used for public operations (including driving trucks) are to be maintained in a safe condition. Each item is to be able to be identified.

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Inspection and maintenance strategies shall be established to ensure safety. Records shall be kept of maintenance strategies and actions to prove due diligence and shall be made available on request of the relevant authority.

2.6.1 Records shall be available to the owners of the items. Where the locomotive or rolling stock is sold or the owner transfers to another society, a copy of the records of the item shall be forwarded to the appropriate Society.

### **3. LOCOMOTIVES - General.**

- 3.1 Every Locomotive shall be fitted with a suitable braking device where practicable. Where a driver rides on or in Locomotive it shall be fitted with an effective brake.
- 3.2 Couplings between engine and Driving truck or carriage for both ground level and elevated operations shall be a solid bar type attached to a fork or clevis with a positive locked or screwed pin similar to Appendix 2 Drawings 1/77, 2/77, 3/77, 4/77, 7/77, 8/77, 9/77 and 10/90. Automatic couplings are not permitted between locomotive and train unless the driver rides on or in the Locomotive.
- 3.3 Couplings between engine and tender shall be at least equal in strength to the coupling between engine and driving truck. Couplings shall be safety checked, such period not to exceed two (2) years.
- 3.4 Every locomotive shall be fitted with an audible warning device.

### **4. LOCOMOTIVES - Steam.**

- 4.1 Every steam locomotive shall have a current boiler certificate issued under the relevant AMBSC Code or State Statutory Authority requirements before operating.
- 4.2 Steam Locomotives shall be operated in a manner so as not to emit sparks that cause damage or personal injury.
- 4.3 Every steam Locomotive shall discharge steam or condensate from blow down, steam traps or any other source to a place where there is no risk of injury to persons.
- 4.4 Every steam Locomotive shall, in the case of liquid fuel fired or gas fired boilers, have adequate safeguards to deflect fuel spillage away from dangerous areas.

### **5. LOCOMOTIVES - Non-Steam.**

- 5.1 Every non-steam Locomotive shall have a cut out device, which when operated, will render the Locomotive inoperable when unattended.
- 5.2 Every non-steam Locomotive shall have exhaust fumes directed away from the Operator and persons riding on the Train.
- 5.3 Every non-steam Locomotive shall have hot exhaust pipes or other areas likely to cause burns to persons adequately protected by lagging or shielding.
- 5.4 Every non-steam Locomotive shall, in the case of liquid fuelled internal combustion engines, have adequate precautions to deflect spillage away from dangerous areas.

## **6. CARRIAGES - Public Passenger Carrying and Driving Carriages.**

- 6.1 Carriages are not considered to be required to be registered with the State Authority
- 6.2 Carriages shall be fitted with adequate strength couplings and where practical in larger gauges should be fitted with safety chains. (See Appendix 2)
- 6.3 Draw gear may be sprung and carriages shall be coupled together using a solid bar type couplings. Screw link couplings, correctly buffered, shall be permitted but loose link couplings shall not be used. (See Appendix 2).
- 6.4 Automatic type couplings shall be permitted on ground level tracks only. Automatic type couplings shall not be used between driver and the Locomotive.
- 6.5 Attention should be paid in the design stage to the centre of gravity of carriages and the centre of gravity shall be kept as low as possible.
- 6.6 Effective brakes shall be fitted to carriages according to clause 8.5.
- 6.7 Carriages shall be enclosed where necessary to prevent passengers contacting dangerous parts of the mechanism.

## **7. CARRIAGES - Driving Truck Scale Type Rolling Stock Non Riding.**

- 7.1 Driving trucks shall be fitted with effective couplings. The locomotive and/or driving truck shall be fitted with an effective brake.
- 7.3 Scale type rolling stock (non-riding) of 7¼ inch gauge or larger and of significant mass and used concurrently on the same track as public running shall be fitted with effective brakes and comply with the same requirements as if the vehicles were passenger carrying rolling stock.
- 7.3 Prototypical couplings may be used on scale type (non-riding) rolling stock.

## **8. OPERATING PROCEDURES.**

- 8.1 Each society shall be responsible for ensuring that all Operators are competent in their duties.
- 8.2 Operators and attendants responsible for safe working shall:-
  - 8.2.1 Be suitably trained and have demonstrated experience to carry out their duties in a safe and competent manner. Attendants, who have demonstrated such experience, may be employed with the minimum age of 15 years. Operators in control of a locomotive shall be of a minimum age of 15 years and shall be under the direct supervision of a competent person 18 years or older at all times.
  - 8.2.2 Not mount, board or leave a train while it is in motion.
- 8.3 An Operator shall be in the immediate vicinity of the operating controls at all time during operations.
  - (a) For general guidelines for the safe operation of miniature railways see Appendix 3.
  - (b) For safety rules for operators see Appendix 4

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- 8.4 Each society shall compile a manual of safeworking rules and general instructions for its operations. Societies should ensure that such manuals are clear and concise in their content. Safety related procedures should be clearly separate from administrative type instructions to enhance compliance
- 8.5 Societies shall establish a suitable braking policy for trains operating on their system. Such a policy shall be based on grades, weight and speed of trains operating on their system. Societies will satisfy themselves that the solution arrived at shall fulfil operating procedures. They should realise that because of the many differences from one system to another the arrangements adopted may not fulfil the requirements at another location. Refer Appendix 6.
- 8.6 Where a train is fitted with a continuous brake system where possible it should also be capable of being operated by the guard.
- 8.7 A guard shall:-
- 8.7.1 Ride on the last vehicle of a train consisting of three (3) or more public passenger carriages
- 8.7.2 Assist passengers on and off the train if required.
- 8.7.3 Report any malfunction of the train to the driver immediately.
- 8.7.4 Stop the train immediately if any passenger is observed tampering with the couplings or brakes, is not seated correctly or is behaving dangerously.
- 8.7.5 Signal the driver to start from the station or halts on the track after he has ascertained that all passengers are safely seated and it is safe for the train to proceed. The driver shall not start until he has received the “right away” from the guard. On a short train with no guard the driver shall be satisfied that passengers are safely seated.
- 8.8 Light engines operating during public passenger carrying sessions, shall be fitted with effective brakes
- 8.9 Societies shall be responsible for instituting and performing adequate safe working procedures for Traffic operating on their system.
- 8.10 Maximum operating speed shall be a safe speed arrived at in consultation with the inspecting engineer and will be governed by the gauge, ruling gradients, radii of curves, plus any lineside restrictions that may apply to the individual system and shall not exceed 20 kph.
- 8.11 Steam Locomotives left unattended shall be in mid-gear, regulator shut, cylinder drain cocks open and hand brake applied or wheels spragged
- Engines with slip eccentrics shall have regulator shut, cylinder drain cocks open, hand brake applied or wheels spragged.
- The gauge glass should be full and the blower shut off.
- 8.12 Non-steam Locomotives shall have brakes applied or be suitably spragged and the cut-off device activated, to prevent accidental or unauthorised movement when unattended.
- 8.13 Refuelling of liquid fuelled locomotives shall be carried out in a non-hazardous location,

remote from the public.

8.14 At each hobby miniature railway location there shall be suitable first-aid and fire fighting equipment.

8.15 Drivers shall be aware of maximum operating speed and any special conditions of the day.

## **9. TRACKS, RAILS AND LINESIDE FIXTURES.**

9.1 The track layout and all associated equipment and facilities shall be designed and engineered to provide safety in operation of the system. Consideration shall be given in the design of the system to maximum speed, maximum loadings and where applicable, bridges and their approaches, crossings, stations or disembarkation areas, communications in multi-train operations.

9.2 Tracks shall be constructed to provide a firm base to support and steer the train. Rails shall be laid on and secured to sleepers or firm structural systems mounted on ballast or engineered foundations.

9.3 Ground level tracks shall be so constructed and ballasted as to maintain accuracy of gauge, alignment and superelevation.

9.4 Elevated tracks shall be secured to supports so as to maintain accuracy of gauge and alignment.

9.5 The rails shall be joined at their ends by welding, or by fishplates or by other acceptable bolting methods.

9.6 Sleepers, where used, shall be laid on flat surfaces capable of providing adequate bearing capacities for the imposed loading and to achieve rail height and alignment on permanent installations.

9.7 A change of direction in the track shall not impede positive traction for the train. **NOTE:** A transition curve of adequate radius leading into and out of such change of direction may be necessary.

9.8 The design of rail points should consider the following features:

- 1) The moving rail components to be securely supported.
- 2) The moving point tips or rails to be connected by a system to maintain gauge.
- 3) The switch stand or actuating mechanism to be fixed in relation to the main rail.
- 4) An actuating mechanism, other than that for catch points, to hold the points as set.
- 5) Provision for locking the actuating mechanism.

9.9 Where rail tracks cross bridges, a check rail or other positive means to prevent derailment of the train shall be provided both during the approach to and on the bridge. The length of the check rail or other derailment prevention means shall be related to the operating speed and the potential of the train to overturn should derailment occur.

9.10 Railways of 184mm (7 ¼"), 127mm (5"), 89mm (3 ½"), and 63.5mm(2 ½") gauge



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shall conform to the relevant A.A.L.S. Standards – see Appendix 5.

9.11 Line side fixtures, fencing, electrical wiring, water services, buildings and fittings shall comply with Federal, State or Local ordinances as required.

9.12 Fittings for compressed air to provide assisted draft for steaming up should be Ryco style 200/900 1/4 inch series with the female coupling provided as part of the fixtures. Compressed air hoses should be fitted with the nipples, and where necessary utilise 1/4 inch BSP unions.

## **10. PORTABLE MINIATURE RAILWAY**

10.1 Prior to operation on each day, the portable miniature railway shall be inspected for compliance with this code.

10.2 Adequate precautions shall be taken to ensure the safety of the public.

10.3 Where a portable miniature railway, on being set up requires to be levelled, suitable stable packing shall be used.

## **11. MINIMUM RAIL GAUGE**

11.1 The minimum rail gauge for Public passenger carrying operations should be 127mm (5") gauge for elevated and ground level railways, excepting Driving trucks. Where elevated or ground level tracks of a smaller gauge than 127mm (5") gauge only are installed they should operate at an appropriate speed as determined by the requirements of paragraph 8.10

## **12. MINIATURE ROAD VEHICLES**

12.1 Road Vehicles shall be operated under all aspects of this Code where applicable.

12.2 Due to the possible close proximity of the general public special precautions shall be taken to ensure their safety.

## **13. MINIATURE STATIONARY PLANT ANCILLARY DISPLAYS AND DEMONSTRATIONS OF PLANT**

13.1 Stationary Plant of all types shall be operated under all aspects of this code where applicable.

13.2 Due to the possible close proximity of the general public special precautions shall be taken to ensure their safety.

## **14. INCIDENTS**

14.1 Reports on all injuries to members and public alike shall be kept in a log book suitably located in or next to the First Aid Cabinet. A record of incidents should also be kept.

## **15. INSURANCE CLAIMS**

15.1 In the event of an incident involving injury to Society members or members of the public generally, the following procedures shall apply:

15.1.1 **DO NOT ADMIT LIABILITY.**

15.1.2 Obtain name and address of injured party.

15.1.3 Obtain name of witness/es and a statement from same.

15.1.4 Obtain statement from driver, guard, station staff etc. involved.

15.1.5 Complete an Incident Report and file for future use if necessary.

15.1.6 If incident considered serious enough inform Insurance Company of possible

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claim, inform State Statutory Authority as required by State Legislation and forward a copy of Incident Report to AALS National Insurance Officer.

15.1.7 If injured person requests details of Society's Insurance, DO NOT provide any details except name and address of Society Hon. Secretary and request that any enquires be made in writing.

15.1.8 In the event that the incident is further pursued in writing to the Society they should notify their Insurance Company immediately plus also notify the National Insurance Officer.

15.1.9 Details as outlined in 15.1.6 and 15.1.8 above are required in order to build up an Insurance Record for use by the Association in negotiations for possible National or Individual Society Schemes.

## **16 HAZARDS**

16.1 With most operations, especially those involving machinery and persons, a number of hazardous situations may occur.

16.2 In order to ensure that the operating environment of each Miniature Railway is as safe for visiting public and members as is possible, each Society shall identify hazards that may apply to their particular situation.

16.3 In identifying a possible hazard it then follows that necessary procedures be put in place so as to remove the possibility of any hazard causing injury to members and public alike.

16.4 No two sites will be the same and each one must be considered on its own merits by the Society.

## **17. TRAINING**

17.1 Hobby Societies operating Miniature Railway; must ensure that all members engaged in operating the Miniature Railway have received suitable training which will enable them to carry out their respective tasks without risk to their health and safety or the health and safety of other persons.

17.2 Societies shall ensure that competent persons are used to undertake the training and examination of members and are familiar with the tasks being performed.

17.3 Societies shall review training methods from time to time especially if there is a change to operating methods or new equipment introduced.

17.4 Societies shall keep a record of all members trained :or the various categories of operators that exists at their location.

## **18. AMENDMENTS**

18.1 Amendments to this document may be made from time to time as per the procedures laid down in the Australian Association of Live Steamers Constitution and By-Laws.

## **APPENDIX 1**

### **1. ROLLING STOCK - Straddle Type**

- 1.1 89mm (3½") gauge public passenger carriages should not exceed 1220mm (4'-0") in length and shall seat no more than three adults including driver. Full length side guards shall be provided between seat and foot boards to prevent passenger contact with track and running equipment.
- 1.2 It is recommended that public passenger carriages for 127mm (5") gauge be 1520-1830mm (5' - 6') long, bogie type and seat five adults - seat boards should be 250 - 300mm (10" - 12") wide. Foot boards 100 -115mm (4" - 4½") wide and full length of truck with end boards 100mm (4") high minimum, to ensure that passengers place their feet on the truck on which they ride. Hand rails 100 - 150mm (4" - 6") high should be provided at each end of the truck. Full length side guards shall be provided between seat and foot boards to prevent passenger contact with track and running equipment. Seats on ground level rolling stock should be 180 -250mm (7" -10") above foot boards.
- 1.3 It is recommended that public passenger carriages for 184mm (7¼") gauge be 2440-3660mm (8' - 12') long bogie type to seat 7 - 11 Adults. Seat boards should be 200-250mm (8" - 10") wide and approx 200mm (8") above foot boards. Foot boards should be 100-115mm (4"-4½") wide and extend the full length of truck with end boards to ensure feet are placed on truck on which the passenger rides. Hand holds should be on both end boards approx 50mm (2") above seat board. The sides and/or floor of the truck shall be enclosed to prevent passenger contact with track and running equipment.

### **2. COMPETENT PERSONS.**

- 2.1 Societies shall compile and maintain a list of drivers considered sufficiently experienced to drive trains carrying public passengers. Societies should issue a card to drivers for use at other societies' tracks.

### **3. TRACK AND WHEEL PROFILE STANDARDS**

- 3.1 It is recommended that Societies construct 184mm (7¼") Gauge equipment to the track and wheel profile standards as shown in Appendix 5.
  - 3.2 It is recommended that Societies construct 127mm (5") Gauge equipment to the track and wheel profile standards as shown in Appendix 5.
-

## APPENDIX 2.

### Recommended Couplings for 63.5mm (2½"), 89mm (3½"), 127mm (5") and 184mm (7¼") gauge Locomotives.

#### MATERIALS:

Mild steel to be used with a 250 mPa minimum yield strength and loaded to a maximum tensile stress of 130 mPa.

#### TYPE A COUPLING:

For models to a total weight of 25kg (55 lbs). Fitted between the engine and the driver.

*Coupling bar:-* 12mm x 3mm steel bar.

*Drawbar pins:-* 5mm (3/16") diameter pin. Refer to AALS drawing No. 8/80.

*Alternative:* For scale models, as an alternative for Type A above.

Refer to AALS drawing No. 9/80.

*Note:* A 20 x 6mm bar is securely fastened to a vertical bracket between the frames of the loco, if a tank type, or on the tender which ever connects to the riding truck. This design requires careful thought in the positioning of the vertical bracket and its fastening, as this will change from model to model.

#### TYPE B COUPLING:

For models to a total weight of 120kg (264 lbs). Fitted between the engine and the driver.

*Coupling bar:-* 16mm x 5mm steel bar.

*Drawbar pins:-* 6 mm or (¼") diameter pin. Refer to AALS drawing Nos. 1/77, 2/77, 3/77, 4/77. and 7/77.

#### TYPE C COUPLING:

For models in excess of 120kg, these are to be as specified by the societies Safety Committee or as for 184mm (7¼") gauge standards.

#### AUTOMATIC COUPLINGS:

Automatic type couplings may also be used as an alternative for ground level passenger carriages.

#### ELEVATED TRACK COUPLINGS: 63.5mm (2½"), 89mm (3½") and 127mm (5") gauges.

*Coupling bar:* Swivel bar with spring loaded pin or screwed bolt.

Bar to be minimum of 16 x 5mm with 6mm (¼") pin or bolt, or equivalent.

Engine to tender to driving truck couplings to be not inferior to the truck coupling standard.

Refer to AALS drawing Nos. 1/77, 2/77, 3/77, 4/77 and 7/77.

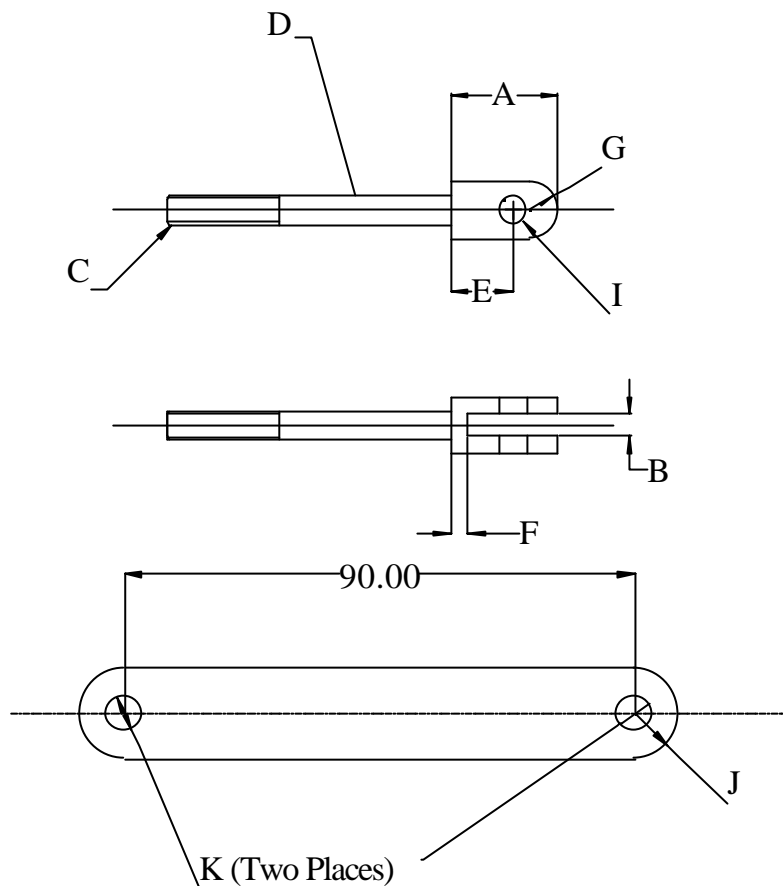
#### COUPLING HEIGHTS:

1. 127mm (5") gauge. 82.5mm + 0mm (¾" + 0") -3mm ( -1/8")
2. 184mm (7¼") gauge 127mm + 0mm (5" + 0") -5mm ( -3/16")

The height is taken from the railhead.

**APPENDIX 2.**

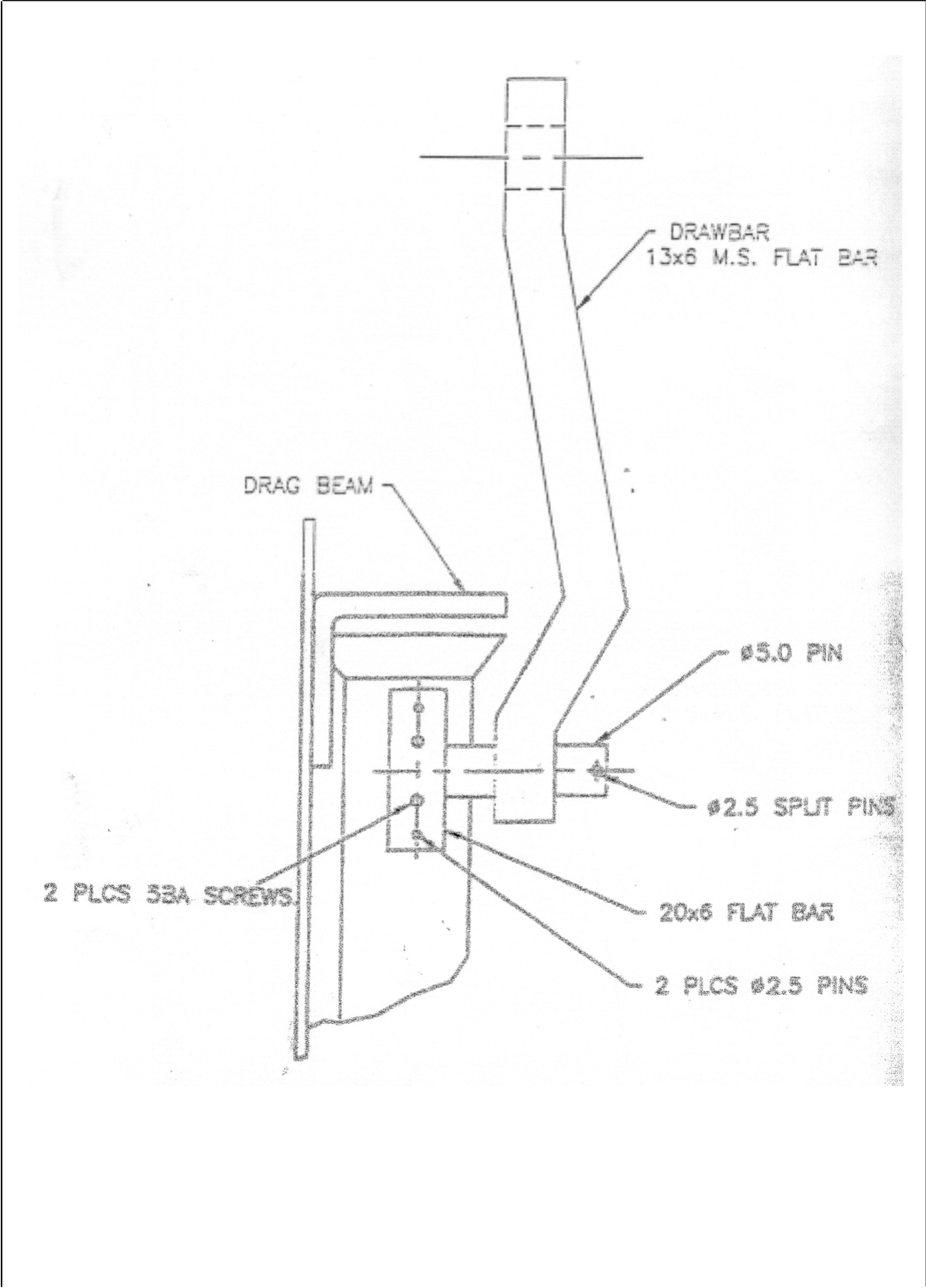
**Type A and type B Couplings AALS Drawings No 1/77, 2/77 and 8/80**



	<b>Type A</b>	<b>Type B</b>
Material	10mm Square bar	16 mm square bar
A	19mm	30mm
B	4mm	8mm
C	M5	M6 or M8
D	5.0ø	8.0ø
E	11mm	24mm
F	3mm	6mm
G	R5	R8
I	5.0ø	6.5ø
J	R8	R8
K	6.5ø	6.5ø
Coupling Bar	16 x 3mm	16 x 5mm

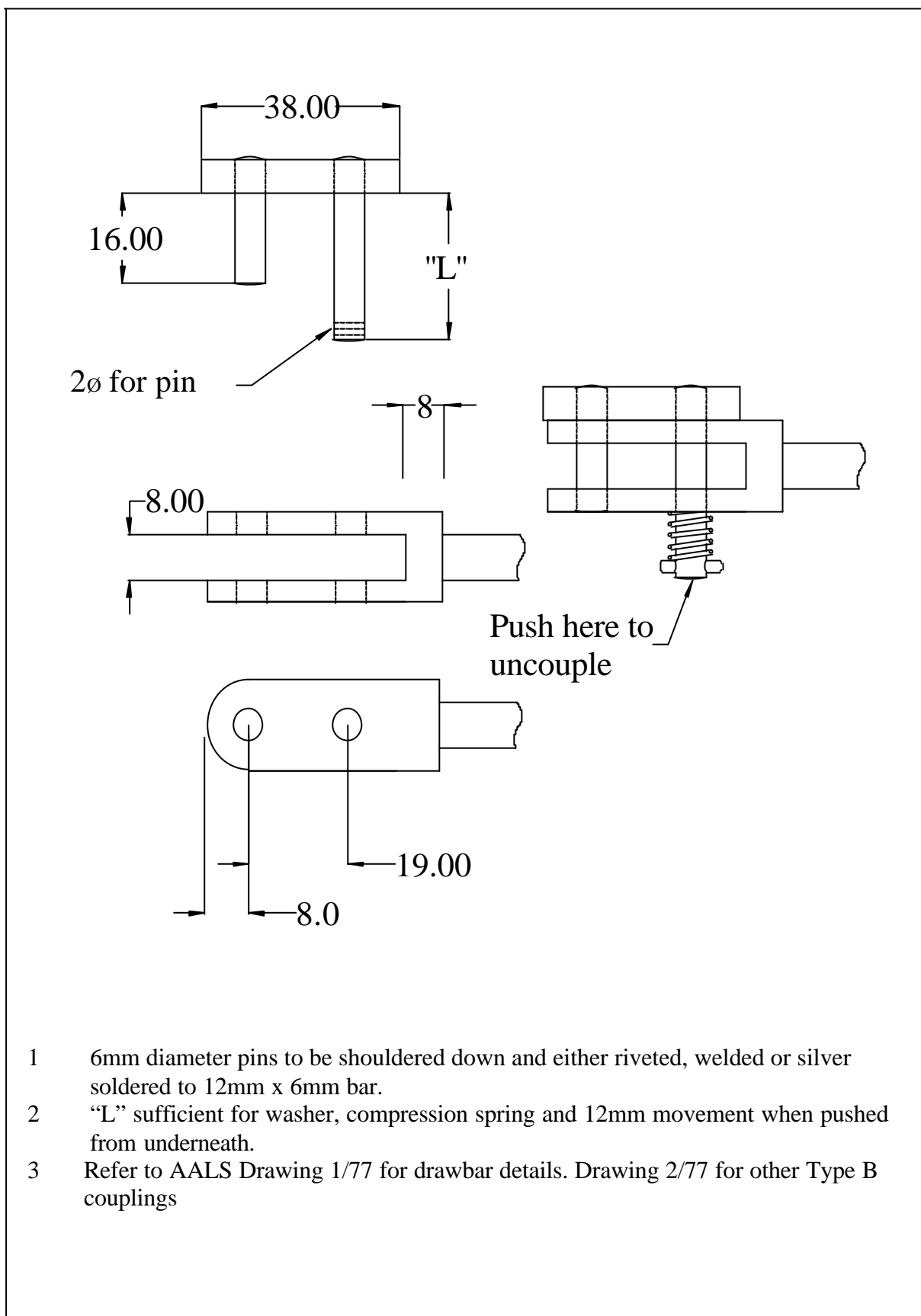
**APPENDIX 2.**

**Type A coupling (Alternative). Drawing No. AALS 9/80.**



**APPENDIX 2.**

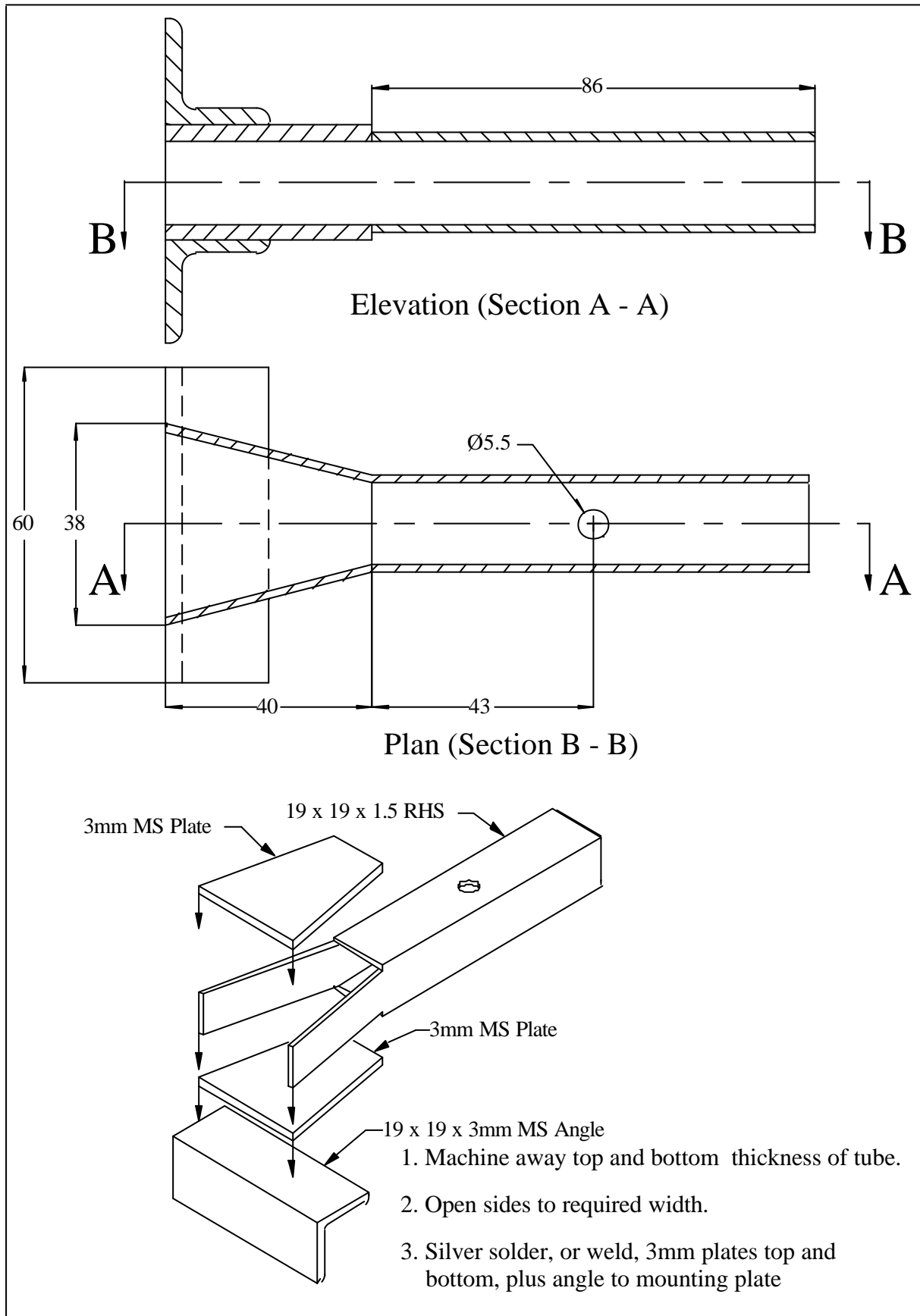
**Type B Coupling AALS Drawing No 3/77. Variation 2.**



- 1 6mm diameter pins to be shouldered down and either riveted, welded or silver soldered to 12mm x 6mm bar.
- 2 "L" sufficient for washer, compression spring and 12mm movement when pushed from underneath.
- 3 Refer to AALS Drawing 1/77 for drawbar details. Drawing 2/77 for other Type B couplings

**APPENDIX 2.**

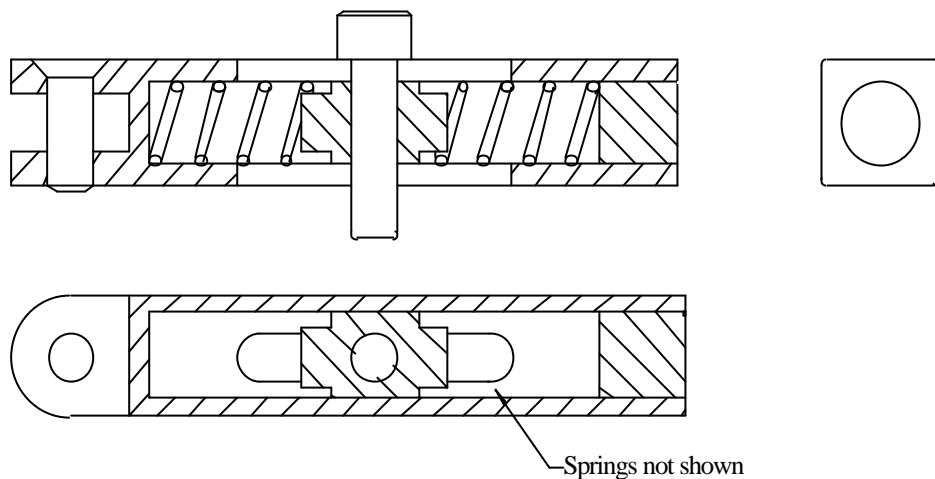
**Type B coupling. AALS Drawing No. 4/77.**



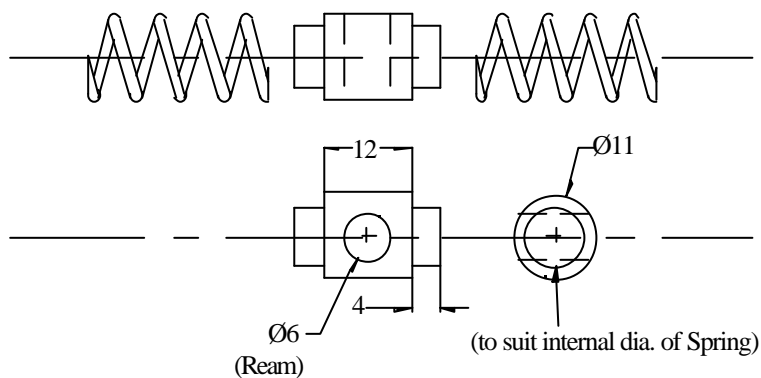


**APPENDIX 2.**

**Type B coupling. AALS Drawing No. 7/77.  
Draftgear for use with coupling pocket.**



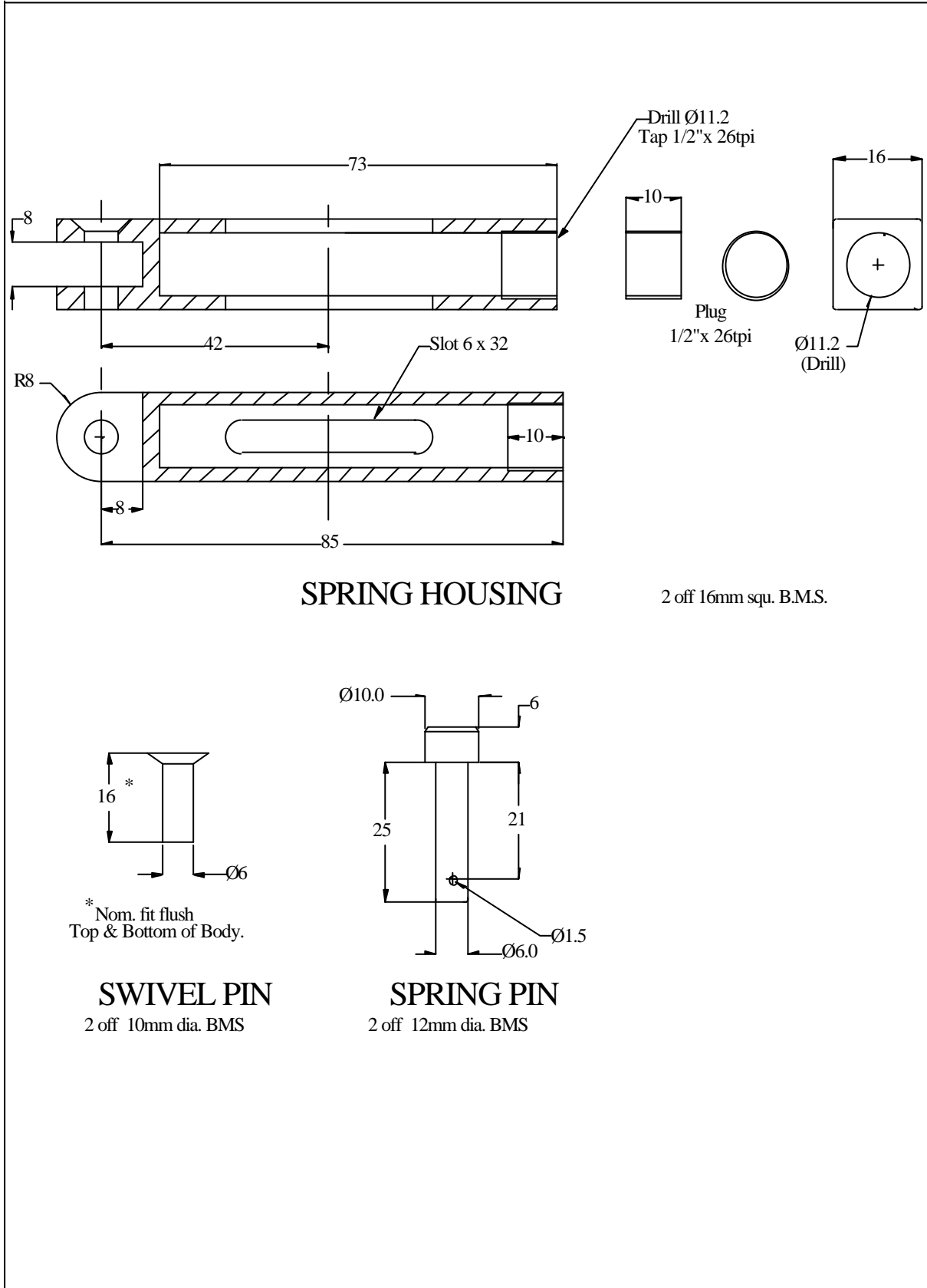
**ASSEMBLY**



**DRAFTGEAR SPRINGS & BOSS**

**APPENDIX 2.**

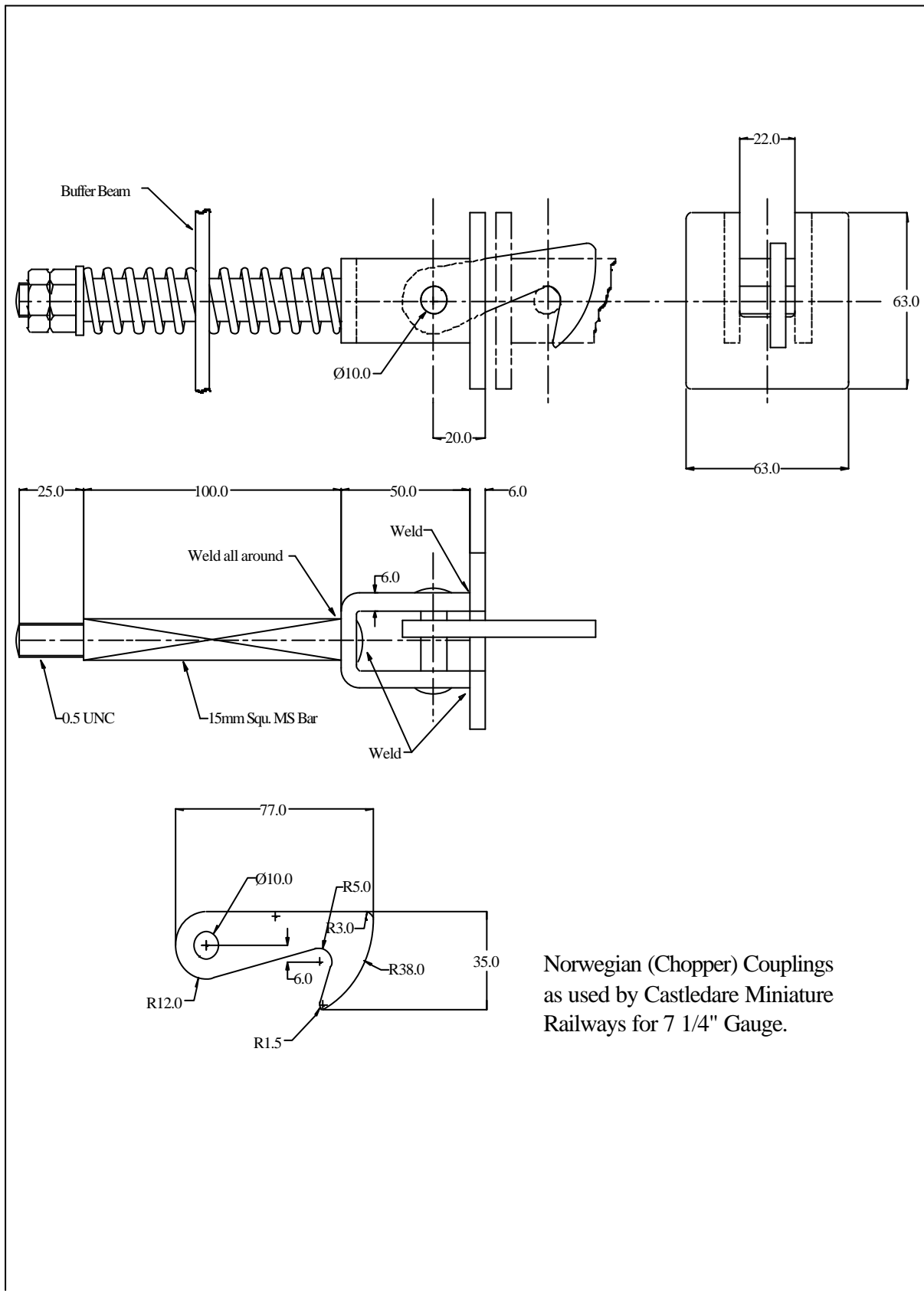
**Type B Coupling. AALS Drawing No. 007/77 (Continued)**



**APPENDIX 2.**

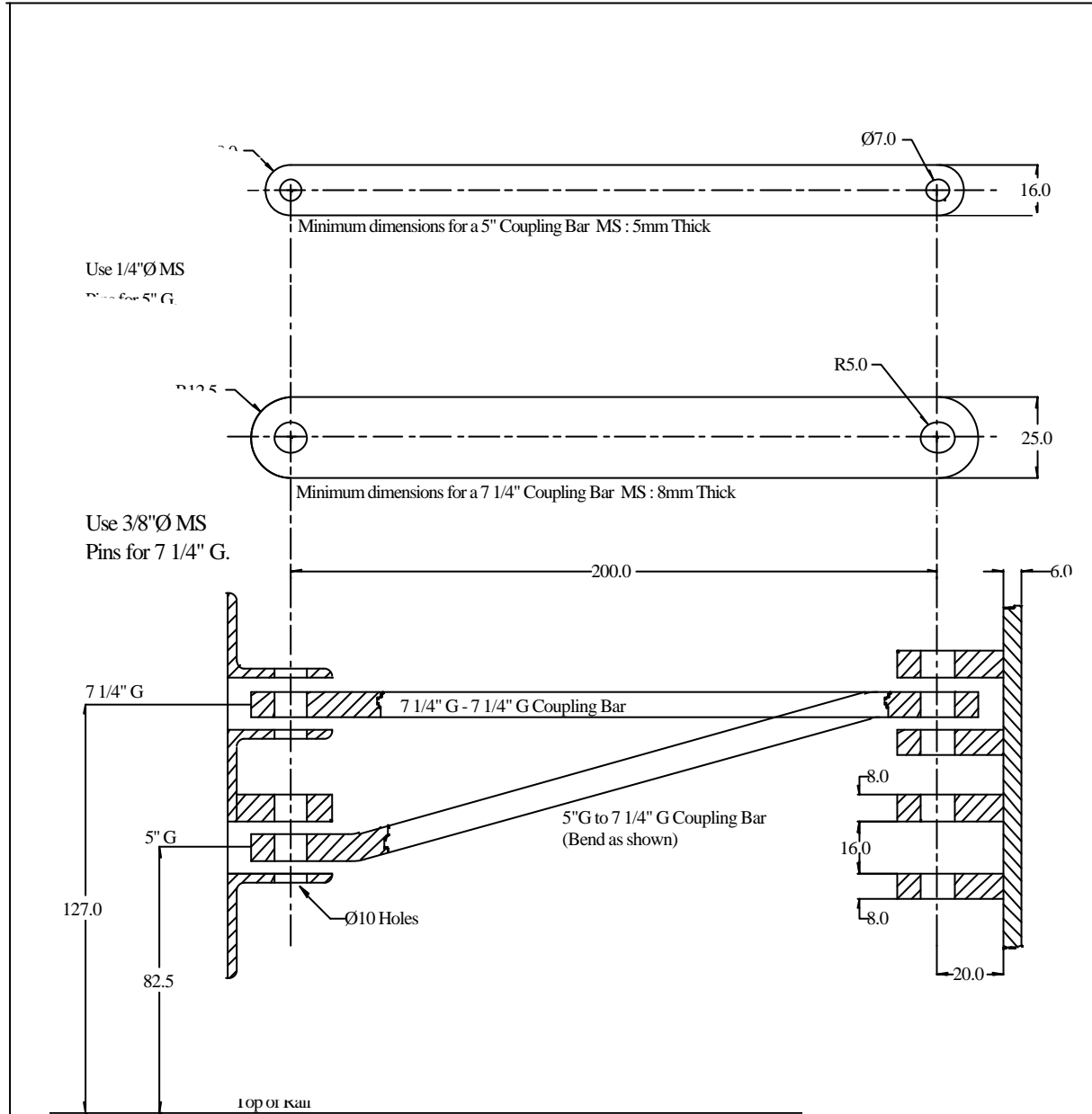
**AALS Drawing No. 10/90**

**As used by Castledare Miniature Railway - 7¼"(184mm) Coupling**



**APPENDIX 2.**

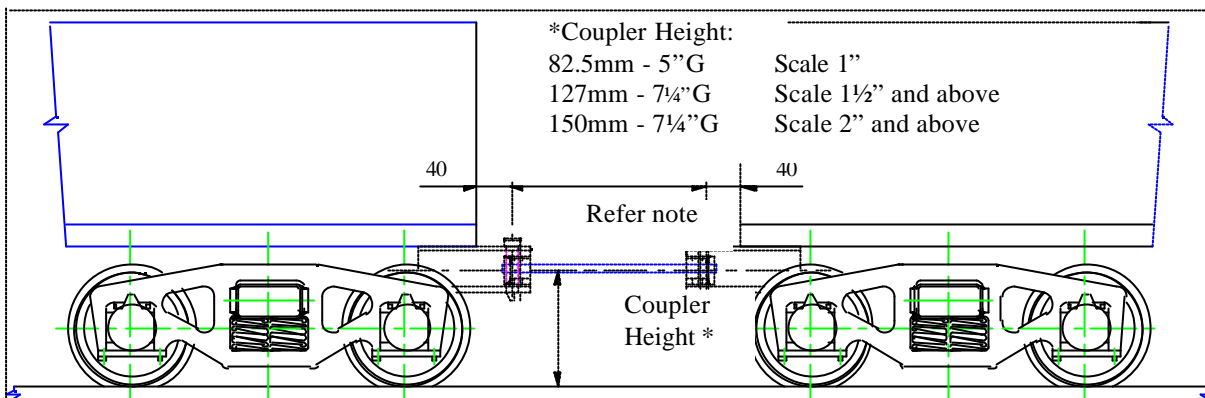
**AALS Drawing No. 11/90**  
**7 1/4"(184mm) to 5"(127mm) gauge Couplings**



When a coupling bar is to be used between 5" and 7 1/4" gauge rollingstock (and locomotive) then the bar should be that specified for 7 1/4" gauge

**APPENDIX 2.**

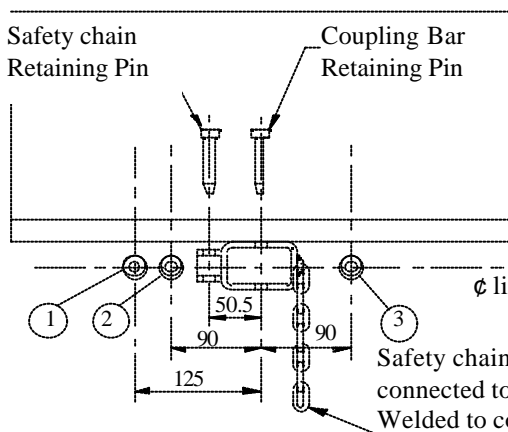
**Carriage Connections. AALS Drawing No 1/93.**



Note The Coupling bar is to be long enough to allow a minimum of 50mm clearance between carriage corners when negotiating a curve of 10 metre radius

Refer to Standard Coupling Bar Drawing AALS 11/90

**Coupler Pocket Location Details**



Note Retaining Pins to be welded to coupler pocket, carriage buffer beam or carriage end using suitable small chain and held in coupler pocket using suitable 'R' clip

Minimum distance for fittings from carriage end

**Fittings**

- 1 Stored Air - RYCO - P/N 201
- 2 Vacuum - Spigot 6Ø
- 3 Train Brake Air - JAMAC - P/N310-M4 Barb 3ITS

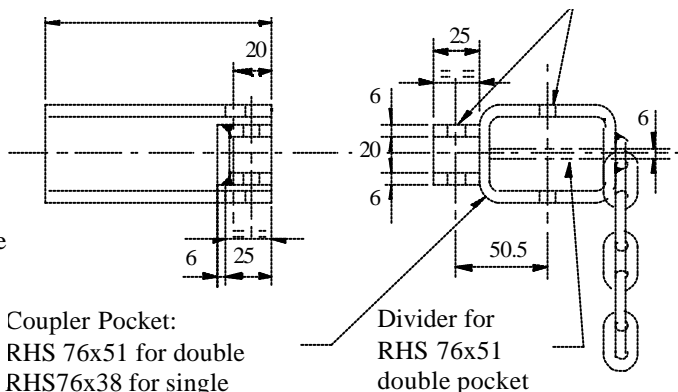
Safety Chain - Approx. 250  
 Hoses - Approx 500\*8Ø High Temp

Note Chain and Hose lengths depend on the Coupler length.  
 This standard is for 7/4" gauge and defines an additional coupling height for 2" scale and above rollingstock.  
 The principles can be applied to 3 1/2" and 5" gauge using suitable scaling

**Position of Air and Vacuum Fittings**

Length to allow attachment to bogie centre

Drill 10Ø all holes



All Dimensions in Millimetres

**Safety Chain and Coupler Pocket Details**

### **APPENDIX 3.**

#### **General Guidelines for Safe Operation of Miniature Railways.**

1. Operators/attendants shall be competent in their duties and aware of the responsibilities of the society to provide a safe and secure environment for visiting members of the public.
2. Operators shall be aware of maximum operating speeds, any load or operating restrictions applying at the time of operations plus action to be taken in case of emergencies.
3. Track and lineside fixtures should be inspected each day before the commencement of operations to determine:
  - a.) No portion of track is damaged, omitted or worn so that it is unsafe or may develop into an unsafe condition.
  - b.) Lineside fixtures are safe and clear of tracks.
  - c.) Irregularities which are to be reported to responsible society officials and not operate trains until such irregularities are corrected.
4. Societies shall not allow passengers to ride who are visibly ill, suspected of being under the influence of drugs or alcohol, have no footwear or unsuitable footwear e.g. thongs, open sandals.
5. Do not allow passengers to ride who cannot be safely seated. Stop the train immediately if any passenger is observed tampering with couplings or brakes or is behaving dangerously, such as standing up.
6. Trains shall not be started or operated while any person (passenger, spectator or society member) is in an endangered or unsafe position on the train.
7. Drivers shall remain in command of operating controls at all times and be alert for signals indicating the condition of the track ahead as well as other obstructions that may occur.
8. Guards shall assist the driver in control of passengers during the ride plus as required with obstructions.
9. Station staff shall assist with the safe loading and unloading of passengers and control of spectators.
10. Signalmen shall have a thorough knowledge of safeworking procedures and guide trains along the system in a safe and efficient manner.
11. No person, other than qualified operators, shall be permitted to operate trains during public passenger hauling operations.
12. Operators shall be aware of procedures for assisting ill or injured passengers
13. Factory installed safety devices shall not be tampered with or removed.

**APPENDIX 4.**

**Safety Rules for Operators of Miniature Railways.**

1. Do not operate trains when feeling ill or under the influence of drugs or alcohol.
  2. Persons suspected of being under the influence of alcohol or drugs or who are visibly ill must not be allowed to ride.
  3. Assist the passengers on and off the ride when necessary.
  4. If the ride is being misused in any way by the passengers, shut it down until the condition is corrected. Do not allow seats to be rocked or passengers to stand up.
  5. Smoking by passengers must not be permitted, since hot ashes can be dropped or blown into the eyes of other passengers on the ride.
  6. Be cautious and ready for the unexpected where children are involved. Underage children should be accompanied by a responsible adult and all persons shall be seated on the carriage.
  7. Passengers waiting for the next ride must be kept away from any moving parts, and within the waiting area.
  8. Be alert when train is operating and be prepared for an emergency stop.
  9. Never, under any circumstances, walk away from the train while it is operating and carrying passengers.
  10. Take note of the nearest location of a fire extinguisher and check its condition.
  11. Ensure that entrances and exits are closed of: before the ride commences.
  12. Report any fault or malfunction immediately to your supervisor.
  13. Be familiar with first-aid treatment.
  14. Take pride in operating safely.
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**APPENDIX 5**

**AALS 5" (127mm) Track and Wheel  
Profile Standards**

Fine Scale

Narrow Gauge

Track Gauge	G	5"	127mm	5"	127mm
<b>TRACK Dimensions</b>					
Check Gauge ( <i>Note 1</i> )	CG			4-13/16"	122mm
Check Rail (CR=CG-W-GW)	CR			4-17/32"	115mm
Width of Flangeway	W			9/32"	7mm
Gauge Clearance (G-BB-2*FT)	GC			1/8"	3.17mm
Gauge Widening (Curves/Frogs) <i>Recommended Maximum</i>	GW			3/32"	2mm
Railhead Radius	HR			0.05" to 0.08"	1.25 to 2mm
Depth of Flangeway	D			0.2" to 0.25"	5 to 6.35mm
Check Clearance (CR+W-BB-FT)	CC				2mm
<b>WHEEL Dimensions:</b>					
Back to Back	BB	4-11/16"	119mm	4-9/16"	116mm
Flange Depth	FD	0.140"	3.6mm	3/16"	5mm
Flange Thickness ( <i>Note 2, 3</i> )	FT	0.106"	2.7mm	5/32"	4mm
Flange Angle - Front Degs	FF	12-20	12-20	12-20	12-20
Flange Angle - Rear Degs	FR	8	8	8	8
Wheel Check (BB+FT)	WC	4.794"	121.7mm	4-23/32"	120mm
Wheel Gauge (BB+2*FT)	WG	4.9"	124.4mm	4-7/8"	124mm
Wheel Root Radius	WR	0.070"	1.8mm	0.070"	1.8mm
Wheel Tyre Taper (Degs)	WT	1.5—2	1.5—2	1.5—2	1.5—2
Wheel Tyre Width (Min)	WW	0.535"	13.6mm	5/8"	16mm
<b>ROLLINGSTOCK Dimensions:</b>					
Coupler Height above Rail	CH	3-1/4"	82.5mm	3-1/4"	82.5mm
Drawbar X-Section (Min)	DX	5/8" x 3/16"	16 x 5mm	5/8" x 3/16"	16 x 5mm
Coupler Pin Diameter (Min)	PD	1/4"	6.35mm	1/4"	6.35mm
Running Gauge Clearance	RC	3/8"	9.5mm	3/8"	9.5mm

Also refer to AALS Drawings 1/77, 2/77, 3/77 and 4/77

*Note 1: Care should be taken where gauge widening is used with checkrails. Where there is gauge widening, the term CR is reduced. Refer to formula for CR. Irrespective of GW, CG is always 4 13/16 inch.*

*Note 2: For narrow gauge intermediate driving wheels requiring thin flanges, the width shall be 1/8 inch. The reduction of 1/32 inch to be effected from the front of the flange.*

*Note 3: For intermediate driving wheels where flanges are not required the tread diameter shall be machined parallel for the total width of the flange and flange to tread radius viz (narrow). 5/32" + 1/16" = 7/32".*



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**APPENDIX 5**

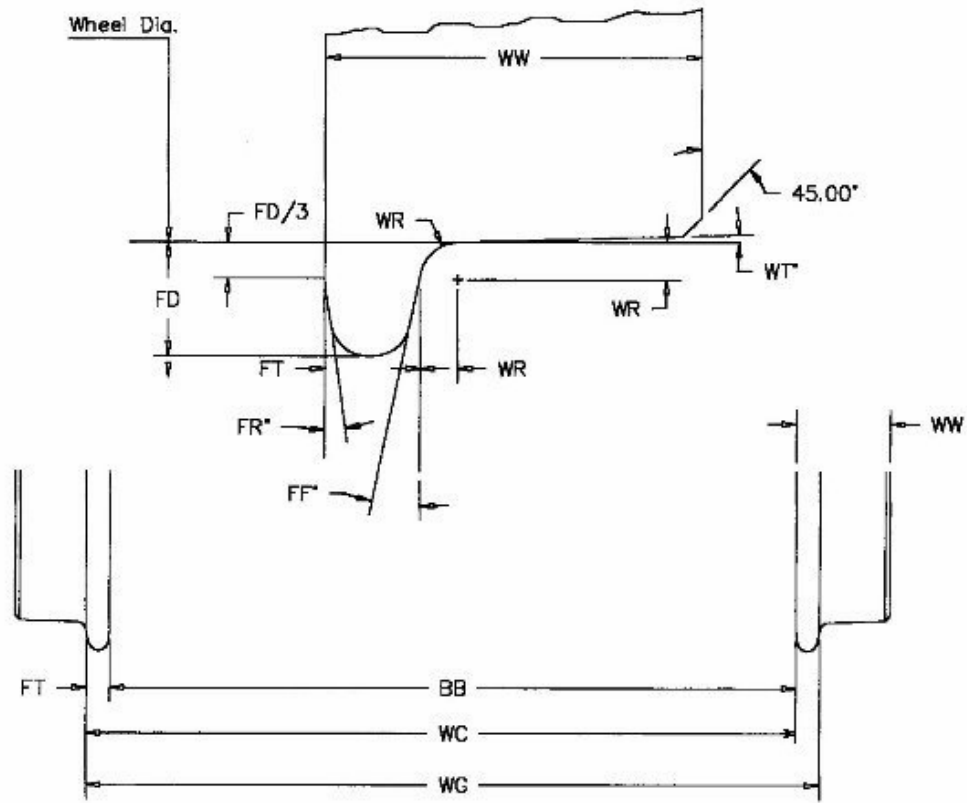
**AALS 7¼" (184mm) Track and Wheel Profile Standards**

Track Gauge	G	Fine Scale		Narrow Gauge	
		7-1/4"	184.15mm	7-1/4"	184.15mm
<b>TRACK Dimensions</b>					
Check Gauge (CR+W=G-W+GW)	CG			7"	177.82mm
Check Rail	CR			(6-5/8")	168.50mm
Width of Flangeway	W			(3/8")	9.32mm
Gauge Clearance (G-BB-2*FT)	GC			(5/64")	2.15mm
Gauge Widening (Curves/Frogs) <i>Recommended Maximum</i>	GW			(1/8")	3mm
Railhead Radius	HR			0.08"to 0.12"	2 to 3mm
Depth of Flangeway	D			5/16"to 3/8"	8 to 9.5mm
Check Clearance (CR+W-BB-FT)	CC				1.82mm
<b>WHEEL Dimensions:</b>					
Back to Back	BB	6-3/4"	171.45mm	6-11/16"	170mm
Flange Depth	FD	0.2"	5.08mm	0.2 to 0.3"	5 to 7.5mm
Flange Thickness	FT	0.17"	4.2mm	0.17"	4.2mm
Flange Angle - Front Degs	FF	12-20	12-20	15-20	15-20
Flange Angle - Rear Degs	FR	8	8	8	8
Wheel Check (BB+FT)	WC	6.86"	174.2mm	6.86"	174.2mm
Wheel Gauge (BB+2*FT)	WG	7.02"	178.4mm	7.02"	178.4mm
Wheel Root Radius	WR	0.1"	2.5mm	1/8"	3mm
Wheel Tyre Taper (Degs)	WT	2	2	2	2
Wheel Tyre Width (Min)	WW	0.776"	19.7mm	1"	25mm
<b>ROLLINGSTOCK Dimensions:</b>					
Coupler Height above Rail	CH	5"	127mm	5"	127mm
Drawbar X-Section (Min)	DX	3/4" x 1/4"	19 x 6.35mm	1" x 5/16"	25 x 8mm
Coupler Pin Diameter (Min)	PD	0.375"	9.52mm	3/8"	9.52m
Running Gauge Clearance	RC	0.625"	15.87mm	0.625"	15.87mm

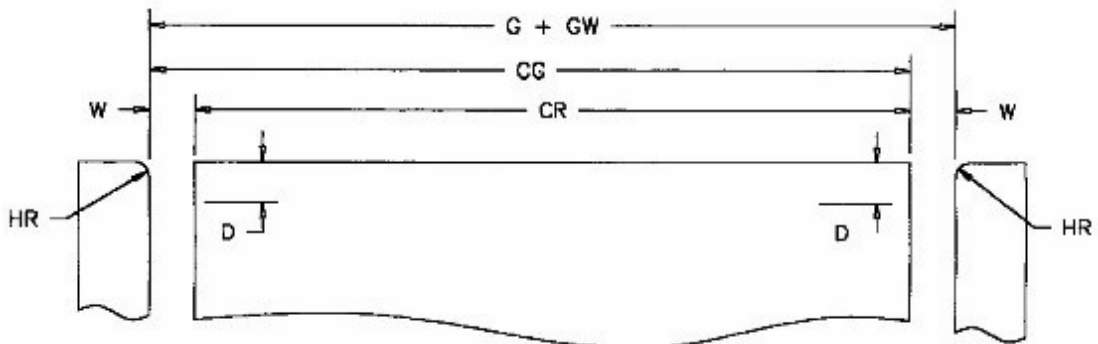
Also refer to AALS Drawings 1/77, 2/77, 3/77 and 4/77

**APPENDIX 5**

**AALS Track and Wheel Profile Standards**



**Wheel Profile Standard**



**Track Profile Standard**

## **APPENDIX 6**

### **Recommended Minimum Braking Requirements for Miniature Passenger Carrying Railways**

#### **1. Locomotives.**

- 1.1 All locomotives, whether the Operator rides on, in or behind the locomotive on a suitable driving truck or driving carriage, shall be fitted with an effective braking system. The system shall be capable of stopping a light engine to the satisfaction of the owner/operators Societies Safety Officer/Committee.
- 1.2 All locomotives hauling three or more public passenger carriages shall be fitted with an effective braking system, capable of operating the carriage brakes.
- 1.3 Mechanical brakes should be capable of being retained on.

*Note:* Refer to Section 1.3 (Definitions) for definition of *Locomotive* and *Light Engine*.

#### **2. Carriages.**

- 2.1 A carriage braking system may be independent of the locomotive braking system but shall be capable of being applied by the operator. eg lineside charged air brake system with the brake valve on the driving carriage.
- 2.2 No brakes are required for a two carriage train, however steam or vacuum could be extended from the locomotive brake.
- 2.3 Trains of three or more carriages to have one in three (or part thereof) carriages braked, either independent of the locomotive or as above.
- 2.4 Driving trucks or guards vans which carry passengers shall count as a carriage.

#### **3. Guard Vans or Vehicles**

- 3.1 Guards vans or vehicles are required for three carriages or more.
- 3.2 An effective mechanical brake on a minimum of four wheels should be provided.
- 3.3 Mechanical brakes should be capable of being retained on.

## APPENDIX 7.

### Non-Exhaustive Identification of Hazardous Situations.

1. Below are some possible hazards that may confront the average Society operating public open days. Each one is required to identify those that are applicable to their operating environment and take appropriate action to neutralise or minimise any possible effect they may have.

2. Objects such as buildings, trees, cuttings, walls, bridge sides or other fixtures too close to centre line of track. As a general rule if any object can be touched by outstretched hand then it is in a hazardous zone.

Rectify by: i) Removing or widening cutting or bridge sides if possible.  
ii) If not then travel at restricted or slow speeds in the problem areas.

3. Members and public riding on trains with flimsy and open footwear, eg thongs, open sandals, scuffs etc or loose and flowing clothing.

Rectify by: i) Placing suitable signs around grounds, specifying the type of footwear and clothing that is acceptable. This to be a condition of entry and riding of trains.  
ii) Station staff politely and firmly refusing to let intending passengers have access to trains. It is necessary to stress that it is for the safety of the intending passenger.

4. Sparks from steam locomotives can cause fires and also cause damage to passengers clothing.

Rectify by: i) Clearing dry undergrowth grass etc from edges of tracks and under bridges  
ii) Fine tuning engines by suitable blast nozzle/grate ratios to achieve minimum draft requirements  
iii) Using sieved/screened and washed coals of suitable size to lower cinder emissions.

5. Poorly Aligned Tracks:

Rectify by: i) Maintaining tracks on a regular basis to ensure a smoother riding right of way with gradual changes or directions and super elevation. Particular attention should be paid to rail joints which will drop with continual use. Special pullers may be made to correct this problem.  
ii) Ballast, whatever the type used, should be packed so that the track is firm and does not “sag” or “pump” as trains move over the section.  
iii) Suitable expansion joints may be needed to stop track lifting in hot weather. Number and type will depend on the exposure to the direct heat from the sun, length of straights and position of curves. Remember to stop TRACK from becoming a HAZARD you need a regular maintenance program.  
iv) Regular maintenance and checks are also required on all rollingstock, especially public passenger vehicles. Incorrect flange profile or

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excessive flange wear can be a hazard, causing derailments and therefore possible injury to passengers.

6. Careful consideration should be given in choosing a design of road vehicle. Because they are likely to be in close proximity of the public items such as open gear trains, spoked flywheels could be hazardous areas. Care should be exercised when moving on roads or tracks used as public walkways.
  7. When displaying operating items of plant on public days attention shall be paid to positioning of protective barriers, hot water drains and exhaust manifolds. Barriers shall not allow public to reach moving/operating plant.
  8. Other possible hazardous areas are:
    - 8.1 Stairways, steps on bridges etc.
    - 8.2 Public pathways and facilities provided for public use eg. picnic tables, BBQ pits etc.
    - 8.3 Electrical installations both high and low voltage.
    - 8.4 Storage of equipment in workshops e.g. flammable liquids etc.
    - 8.5 Dead trees and the possibility of falling branches.
  9. This list shall be reviewed and upgraded annually.
-

## **APPENDIX 8.**

### **Owner/User Inspection of Non-Boiler Plant and Equipment.**

#### **Preamble.**

In the interest of assisting member societies with the further movement toward self regulation, this document offers guidelines for the selection of persons competent to inspect non-boiler items of plant and equipment owned by the society, and a minimum checklist of items to be inspected regularly. Original design approval for certain items of plant and equipment should still be obtained in the first instance from a registered professional, and development approval if necessary should be obtained from the appropriate statutory authority. After installation, it is acceptable that a competent person may be appointed to ensure that ongoing maintenance inspections of a society's non-boiler plant and equipment are carried out and records kept of these inspections. These inspections are the equivalent of, and are in lieu of, those inspections required as part of the Amusement Device registration. If the statutory authority still requires an inspection as part of the amusement device registration then the requirements for those inspections take precedence over this procedure. Professional inspections may be done at the discretion of an individual society.

#### **Guide for selection of a competent person.**

If it is desired to appoint a competent person, whether from a society's membership or otherwise, the following should be used as a guide in the selection of that person

A competent person should be fully conversant with the AALS Code of Practice, and fulfil at least one of the following criteria;

- (a) hold a tertiary qualification in a mechanical or civil engineering field;
- (b) be able to demonstrate an extensive practical background in building or maintaining machinery and/or small structures. Any employment exposure to workplace health and safety practice would be desirable.
- (c) be able to demonstrate any other combination of qualifications and experience deemed to be acceptable by the society's executive.

## **APPENDIX 8.**

### **Owner/User Inspection of Non-Boiler - Plant and Equipment.**

#### **Scope of Inspection Process.**

The scope of the inspection process will cover the amusement device and all existing associated structures used by the public. As mentioned in the preamble, new equipment and structures may need prior approval by a registered professional or statutory authority.

Inspection particulars of plant and equipment covered by this scope shall include at least the following;

#### **(a) Track:**

- structure should comply with Section 9.1-9.5 of the AALS Code of Practice
- clearances to fixtures such as trees, bridge sides, signal posts, fencing, retaining walls, should comply with appendix 7 of the AALS Code of Practice.

#### **(b) Bridges:**

- structural integrity, including footings, walkways, handrails and stanchions, with particular regard to rust and/or rotting.

#### **(c) Tunnels:**

- obstructions and structural integrity.

#### **(d) Fencing:**

- effective in defining publicly accessible areas, and movement within those areas, - structural integrity, including operation of gates where fitted.

#### **(e) Station structures:**

- structural integrity, including footings, walkways, handrails and stanchions and roof where fitted, with particular regard to rust and/or rotting.

#### **(f) Passenger carrying rolling stock:**

- generally to comply with section 6, and appendices 2 and 7 of the AALS Code of Practice.
- structural integrity, enclosures, tyre condition, bogie operation, brakes where fitted and drawgear.

#### **(g) Miscellaneous:**

- generally in accordance with appendix 7 of the AALS Code of Practice, specifically including poles, trees, other overhead structures not previously mentioned, public areas including pathways, and any other potential hazards.

#### **Notes:**

1. The following preface shall be placed on all reports prepared by an authorised inspecting officer of the society:-

"It is not our (my) claim or recommendation that this advice will eliminate claims. However, the correct adoption of safety procedures and preventative maintenance will

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help to reduce risk factors, thus allowing safer and smoother running operations of your (our) hobby facility. Failure to condemn any unsafe condition, operation or equipment at the time of inspection does not constitute approval".

2. Persons who fulfil the requirements of clause 4.12 of the AALS By-Laws and are appointed by an affiliated insured society may inspect equipment for any other affiliated insured society should that person be willing to perform such duties and so act at the request of any other society.

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**NOTE**

*The following two forms are examples of Non Boiler Plant and Equipment Reports.  
Form 1 - **AMUSEMENT DEVICE CHECKLIST FOR MINIATURE RAILWAYS**  
Form 2 - **NOTES OF INSPECTION**  
These forms may be photocopied for society use.*



**Australian Association of Live Steamers**

**Amusement Device Checklist for Miniature Railways Form 1**

Structure	Code of Practice Reference	Check For	Items (enter name)	Checked By	Date
1. Track	Structure: Section 9.1 to 9.5	Track structure (ballast, etc.), Track Fixings (security of gauge)	1.1		
	Clearances: Appendix 7	Clearances to fixtures e.g. trees, bridge sides, signal posts, fencing, retaining walls.	1.2		
			1.3		
2. Bridges		Footings, walkways, handrail & stanchion security, rot, corrosion.	2.1		
			2.2		
			2.3		
			2.4		
3. Tunnels		Obstructions, structural integrity.	3.1		
4. Fencing		Effective in defining publicly accessible areas, structural integrity, including gate operation.	4.1		
5. Station Structures		Structural integrity, footings, walkways, handrails, stanchions, roof; rot, corrosion.	5.1		
			5.2		
			5.3		
6. Passenger Carrying Rolling Stock	Section 6; Appendices 2 & 7	Structural integrity, enclosures, tyres, bogie operation, brakes & drawgear	6.1		
7. Miscellaneous e.g. Poles, trees, overhead structures, public areas, pathways	Appendix 7	Structural integrity, footings, rot, corrosion, trip hazard.	7.1		
			7.2		
			7.3		

*"It is not our claim or recommendation that this advice will eliminate claims. However, the correct adoption of safety procedures and preventative maintenance will help to reduce risk factors, thus allowing safer and smoother running operations of your leisure facility. Failure to condemn any unsafe condition, operation, or equipment at the time of the inspection does not constitute approval."*



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AND ATTENDANTS OF MINIATURE RAILWAYS, ROAD  
VEHICLES AND PLANT**

**SECTION B**

**APRIL 1999**

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**AMENDMENTS**

<b>Amendment No.</b>	<b>Paragraph No.</b>	<b>Amended By</b>	

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**PREFACE.**

Reprinted in 1999 to improve readability, correct and update the text to include up to amendment No 19 and changes made at April 1998 and April 1999 conventions.

This manual has been compiled by the Australian Association of Live Steamers for use by Affiliated Societies so that a minimum standard of competency can be achieved by their Society Members.

By adopting the requirements and procedures outlined in this code the Association and its Affiliated Societies recognise their obligation to provide a safe environment for visiting public and members alike which will be engendered at the many operating locations throughout the Commonwealth.

**1999 COMMITTEE.**

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**DEFINITIONS.**

For definitions see AALS Code of Practice for the Operation of Miniature Railways,  
Road Vehicles and Plant.

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**SECTION 1. — INTRODUCTION.**

**1. GENERAL.**

- 1.1 This manual is intended to cover the minimum training requirements for operators and attendants of affiliated societies operating miniature railways up to 204mm (8") gauge at an average speed of 20 km/h as a non commercial operation, road vehicles and plant.
- 1.2 With changes to Amusement Device Legislation in various States of the Commonwealth and the trend for self regulation by industry and business in general the need for a high standard of competency in operators is required.
- 1.3 This Manual should be read in conjunction with the AALS. Code of Practice for Operation of Miniature Railways, Road Vehicles and Plant. Issue 2, April 1999 and AS 3533 — 1997 Amusement Rides and Devices Parts 1, 2 and 3.

**2. TRAINING PROGRAMMES.**

- 2.1 Each Society shall be responsible for putting in place suitable Training Programs to examine competency of each classification of Operator and Attendant used during the public operating sessions.
- 2.2 Suitable records shall be kept to verify the qualifications of members.
- 2.3 Societies shall ensure that competent persons are used to undertake the training of members and are familiar with the tasks being performed.
- 2.4 Societies shall review training methods from time to time especially if there is a change to operating methods or new equipment introduced.
- 2.5 The executive of each Society shall appoint a suitably qualified and experienced person(s) to examine the competency of members.

**3. MINIMUM AGE.**

- 3.1 The minimum age for Attendants when operating on Public Running days shall be fifteen (15) years of age.
- 3.2 The minimum age for Operators on Public Running days shall be fifteen (15) years of age. Persons fifteen (15) to seventeen (17) years of age inclusive shall be under direct supervision of a qualified Operator, eighteen (18) years of age or older at all times.

**4. DIRECT SUPERVISION.**

- 4.1 A trainee Operator shall be under direct supervision where the Instructor/Supervisor is riding immediately behind or beside the trainee and can take control should an emergency or similar situation arise.
- 4.2 A trainee Operator may be deemed to be under direct supervision when operating on a small circular track, eg. portable track and the Instructor/Supervisor has visual contact

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**SECTION 2. — GUARDS.**

**1. JOB DESCRIPTION.**

- 1.1 The Guard shall carry a device for signalling the driver and ride on the last vehicle of the train consisting of three (3) or more passenger carriages.
- 1.2 The Guard shall ensure all passengers are correctly seated before giving the signal for the train to move off and that they remain seated and refrain from such actions that are likely to affect the safety of the train during motion.
- 1.3 If it is necessary to back up or stop the train the Guard shall protect the rear of the train.
- 1.4 Any other requirements as determined by each individual Society.

**2. TRAINING SYLLABUS.**

- 2.1 Candidates for the position of guard shall be competent in all sections of the syllabus as outlined below. It is recommended that each Society establish a minimum period of practical experience prior to examinations
  - 2.2 Syllabus shall include training periods in the following subjects:
    - 2.2.1 Loading and unloading trains.
    - 2.2.2 Suitable footwear for passengers.
    - 2.2.3 Protection for rear of train.
    - 2.2.4 Emergency procedures, eg. derailments, injured passengers etc.
    - 2.2.5 Location and operation of Society's First Aid arrangements.
    - 2.2.6 Communication with the driver and public.
    - 2.2.7 Any special operating procedures applicable to each Society.
-

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**SECTION 3. — STATION ATTENDANTS.**

**1. JOB DESCRIPTION.**

- 1.1 Station Attendants shall assist with the safe loading and unloading of passengers and the control of spectators.
- 1.2 Station Attendants shall not allow passengers to ride who are visibly ill, suspected of being under the influence of drugs or alcohol, or have unsuitable footwear. Persons who are handicapped, pregnant, or holding small children are to be advised of suitability to ride.
- 1.3 Station Attendants shall instruct passengers in the correct riding procedure before commencement of the ride.
- 1.4 Station Attendants are to give a signal to the Operators that all passengers are loaded and it is safe to depart the station.
- 1.5 Any other requirements as determined by each individual Society.

**2. TRAINING SYLLABUS.**

- 2.1 Candidates for the position of Station Attendant shall be competent in all sections of the syllabus as outlined below. It is recommended that each Society establish a minimum period of practical experience prior to examinations.
  - 2.2 Syllabus shall include training periods in the following subjects:
    - 2.2.1 Loading and unloading of trains.
    - 2.2.2 Suitable footwear for passengers.
    - 2.2.3 Emergency procedures, e.g. fire, injured persons etc.
    - 2.2.4 Communication with appropriate operator and the public.
    - 2.2.5 Control and organisation of the public.
    - 2.2.6 Location and operation of Society's First Aid arrangements.
    - 2.2.7 Any special operating procedures applicable to each Society.
-

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**SECTION 4. — SIGNAL BOX ATTENDANTS.**

**1. JOB DESCRIPTION.**

- 1.1 Signal Box Attendants shall be responsible for safeworking procedures applicable at their location.
- 1.2 They shall guide trains within their section in a safe and efficient manner.
- 1.3 Any other requirements as determined by each individual Society.

**2. TRAINING SYLLABUS.**

- 2.1 Candidates for the position of Signal Box Attendant shall be competent in all sections of the syllabus as outlined below. It is recommended that each Society establish a minimum period of practical experience prior to examinations.
- 2.2 Syllabus shall include training periods in the following subjects:
  - 2.2.1 Complete understanding of track layout.
  - 2.2.2 Use and operation of the Society's signalling equipment.
  - 2.2.3 Demonstration of safe working equipment.
  - 2.2.4 Emergency procedures in the event of equipment failure.
  - 2.2.5 Communication systems.
  - 2.2.6 Any other requirements as determined by each individual Society.



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**SECTION 5. — OPERATORS.**

**1 JOB DESCRIPTION.**

- 1.1 Responsible for the safety of plant/equipment and persons under his/her control or care.
- 1.2 Any other requirements as determined by each individual Society.

**2. TRAINING SYLLABUS.**

- 2.1 Candidates for the position of Operator shall be competent in all sections of the syllabus as outlined below. It is recommended that each Society establish a minimum period of practical experience prior to examinations.
- 2.2 Syllabus shall include training periods in the following subjects:
  - 2.2.1 Shall have a thorough knowledge of area of operations.
  - 2.2.2 Shall understand the operation of the item of plant/equipment being operated.
  - 2.2.3 Shall be aware of potential hazards in operation of equipment and the minimisation of associated risks
  - 2.2.4 Communication systems.
  - 2.2.5 Knowledge of emergency procedures.
  - 2.2.6 Location and operation of Society's First Aid arrangements.
  - 2.2.7 Refuelling procedures.
  - 2.2.8 Any other requirement as determined by each individual Society.

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**SECTION 6. — DUTY OFFICER.**

1. A person shall be appointed by the executive of each Society and shall be responsible for the safe and efficient operations of the days activities.
2. This person should be a suitable responsible member well versed in the Society's operating procedures and public relation skills in dealing with members of the public.
3. This person shall have a working knowledge of all A.A.L.S. Codes of Practice.
4. The Duty Officer's decision on any matter shall be final on that day

**SECTION 7. — ADDITIONAL PERSONNEL.**

1. Societies may find other positions necessary for the safe operation of the Society's public day.
2. They shall undertake suitable accreditation based on the above format.

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**SECTION 8. — HAZARDS.**

1. All operators should have knowledge of possible hazards within their area of operation.
2. Some possible hazardous areas are:
  - 4.1 Stairways, steps on bridges etc.
  - 4.2 Public pathways and facilities provided for public use eg. Picnic tables, BBQ pits etc.
  - 4.3 Electrical installations both high and low voltage.
  - 4.4 Storage of equipment in workshops, eg. Flammable liquids etc.
  - 4.5 Dead trees and possibility of falling branches.

**NOTE:**

See also Appendix. 7 AALS Code of Practice for the Operation of Miniature Railways, Road Vehicles and Plant.

**SECTION 9. — AMENDMENTS.**

1. Amendments to this document may be made from time to time as per the procedures laid down in the Australian Association of Live Steamers Constitution and By-Laws.

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