Australian Sugar Industry

Code of Practice for the Operations and Procedures at Cane Railway and Road Transport Delivery Points
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Printing History

First Printed
May 2000

Revised and Reissued
March 2009
PREFACE

This Code was prepared by the Australian Sugar Milling Council, Mackay, for the Australian sugar industry in conjunction with CANEGROWERS and the Australian and Queensland Caneharvesters to provide a means of demonstrating compliance with AS 4292 Railway Safety Management in the relevant operational areas.

This Code is part of a series of Codes on cane railway safety. The series includes:
- Code of practice for cane railway operations,
- Code of practice for the operations and procedures at cane railway and road transport delivery points,
- Code of practice for track and civil infrastructure,
- Code of practice for the design, manufacture and maintenance practices of locomotives and rolling stock design for cane railways
- Strategies and procedures for cane railway risk assessments
- Procedures for cane railway risk assessments.

This Code of Practice was first produced in May 2000. Several organisations provided information for and were involved with its preparation, including:
- Australian Sugar Milling Council,
- CANEGROWERS,
- Australian and Queensland Caneharvesters.

The Australian Sugar Milling Council undertook the actual preparation and the project was funded by the Sugar Research and Development Corporation.

Cover photograph kindly supplied by Mr. John Powell, Foulden.
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FOREWORD

This Code provides the generic operating procedures to be followed by all parties (sugar factory, grower and harvesting contractor) for the transfer of cane from infield transport equipment to factory-owned cane railway or road transport systems. The objective of the Code is to establish requirements and to provide guidelines for operations and procedures at cane transport delivery points to comply with the relative requirements of AS 4292. In the existing cane transfer operations, there are procedures which, through long usage, have been demonstrated to be inherently safe. Compliance with this Code may be achieved by adoption or adaption of these safe practices. Similarly, local conditions and requirements pertaining at individual sugar factories can be added to these procedures. Additional sections of the Code list the operations and procedures required for road transport systems at delivery points.

In preparing this Code, it has been recognised that the practices and procedures documented in the Code are not the only methods by which compliance with safe operation may be achieved. Land used for cane railway lines and delivery points is a workplace for sugar industry workers and the sugar factory is considered to be in control of that workplace for the purposes of the Workplace Health and Safety Obligations under the Workplace Health and Safety Act, 1995. As such, the sugar factory has an obligation to ensure that the condition in which the workplace is maintained and the activities undertaken at that workplace by workers, do not present a health and safety risk to any worker (either field or factory), and others who have a bona fide right to be there. Field workers include growers and harvesting contractors. When they are working at a delivery point it becomes a workplace for them and they have an obligation to ensure that the way they undertake their activities does not pose a risk to themselves, sugar factory workers and others. In cane transfer operations within a particular sugar factory’s cane area, there are many practices and procedures which, through established usage, have been demonstrated to be safe. Where these practices and procedures differ widely from those of this Code, risk assessment must be applied to verify and document any local requirements and special conditions which may be established by either the sugar factory management or the contractors. Once an acceptable level of risk for these practices and procedures has been demonstrated, they can be added to or included in this Code for the individual sugar factory’s cane area. These local rules and procedures take precedence over this Code and the Workplace Health and Safety Act takes precedence over both the Code and local rules and procedures.

When operating at a delivery point, workers must ensure that all actions and practices limit the risk of injury to persons or damage to property. This procedure recognises that, while there may be an ideal level of safety, the practical costs to attain this ideal level might far outweigh the benefits and limit the commercial viability of cane transport operations. It is also well understood that operators protect their commercial interests by operating safe cane transport systems. Not all of the practices, procedures and documentation listed in this Code are presently in place at some factories or with growers or harvesting contractors. Where differences occur the applicability of each element of the Code to a particular delivery point must be determined by the level of risk imposed on the operations of the cane railway or road transport system.

Cane transport safety must comply with the workplace health and safety legislation. Occupational health and safety is governed by specific legislation (The Workplace Health and Safety Act, 1995) and is therefore not the primary objective of this Code. However, the
importance of occupational health and safety is recognised within the safety principles of this Code. The Act lists obligations of people at a workplace. A delivery point is an unusual workplace because it is a shared workplace of both the sugar factory and the grower or harvesting contractor. Section 28 of the Act sets out the obligations of an employer:

- to ensure the workplace health and safety of each factory or grower worker at work,
- to ensure his or her own workplace health and safety and that of others is not affected by the way the factory or grower or harvesting contractor conducts their undertaking.

Section 29 of the Act lists the obligations on self-employed persons (growers or contractors). These obligations are similar to those listed above for employers. Under Section 30 of the Act, the obligations of persons in control of workplace are covered. A delivery point is a workplace under the control of the sugar factory. Therefore the sugar factory has a responsibility to establish the safe working practices and standards of infrastructure for these workplaces. The obligation of the organisation or person in control of a workplace is:

- to ensure the risk of injury or illness from a workplace is minimised for persons entering the workplace to work,
- to ensure the risk of injury or illness from any plant (machinery) or substance (chemical) provided by any person for the performance of work by someone other than workers of the person in control is minimised when used in a proper manner,
- to ensure there is appropriate, safe access to and from the workplace for persons other than the workers of the person in control.

Under Section 36 of the Act workers and any other person entering or using the workplace have the following obligations:

- to comply with the instructions given for workplace health and safety at the workplace by the sugar factory management, grower and harvesting contractor,
- for a worker - to use personal protective equipment e.g. safety boots, high visibility clothing, eye protection and head protection when required,
- not to interfere wilfully or recklessly with or misuse anything provided for workplace health and safety at the workplace,
- not to place at risk wilfully the workplace health and safety of any person at the workplace, and,
- not to injure himself or herself wilfully.

This Code has been developed to meet the requirements of Australian Standard AS 4292, Railway safety management series. In implementing the Code of Practice it is necessary for employers to ensure all workers (locomotive crews, factory field staff, growers, contractors and haulout operators) receive a safety induction relevant to their respective tasks at the delivery siding.
SECTION 1  SCOPE AND GENERAL

1.1 SCOPE
This Code specifies the procedures to be considered for inclusion in the operations and procedures at cane delivery points in cane transport systems to form part of a safety management system in accordance with AS 4292.1 Railway safety management. Part 1 Section 7 of the Code addresses the requirements for an interface co-ordination plan which specifies the information which must pass across the interfaces among the various functional groups operating at a delivery point (in either a rail-based or road-based transport system) to enable these practices and procedures to be implemented and to ensure compatibility among these functional groups. Where the delivery points are part of a road transport system similar requirements will apply.

The seasonal nature of the cane harvesting and transport operations also influences the application of this Code.

1.2 APPLICATION
This Code sets requirements and provides generic guidelines for the operations and procedures at cane transport delivery points and safety standards and procedures to comply with the relevant requirements of AS 4292 - Railway safety management. The applicability of each element of these guidelines to individual delivery points should be determined by the level of risk it imposes on each operation. In applying this Code, the following matters must be taken into account:

(a) the role of the cane railway,
(b) the function in the organisation of the person, corporation, contractor or supplier, who is applying the Code,
(c) any agreements between the sugar factory owner and contractors delivering cane to the delivery points,
(d) the promotion of commercial and technical innovation,
(e) existing safety procedures and practices,

Note: Attention is drawn to the Foreword which describes the rationale of the Code to comply with Australian Standard AS 4292 Part 1: Railway safety management – General Requirements.

Other manuals, codes and standards which can be demonstrated to be good practice may be used. However, caution should be exercised to ensure their applicability to the scope and context of this Code. When the design of or conditions at a delivery point fall outside the scope of this Code or there is non-compliance with the requirements, the individual sugar factory and the associated harvesting contractor(s) must manage any associated risk in accordance with AS 4292 Parts 1 and 2.

In this Code, the operators of the haulouts transferring cane at a delivery point are considered to be employees of a harvesting contractor. A harvesting contractor may also be a grower.

Elements of the Code also apply to access to the cane railway corridor by parties in addition to authorised sugar factory, locomotive and track maintenance crews.
1.3 REFERENCED DOCUMENTS
The following documents are referenced in this Code:
AS 4292  Railway safety management.
AS 1418, Crane and hoist code, Part 1 - General requirements and
Part 2 - Serial hoists and winches
Australian Sugar Industry Code of practice for cane railway operations
Australian Sugar Industry Code of practice for track and civil infrastructure
Australian Sugar Industry Safe operating practices for cane railways
Rural Plant Industry Code of Practice 2004 (Division of Workplace Health and Safety)
Safe Design and Operation of Tractors 2005 (Division of Workplace Health and Safety)
Sugar Industry Code of Practice 2005 (Division of Workplace Health and Safety)
Cane Rail Safety – a supplement to Division of the Workplace Health and Safety Sugar Industry Code of Practice 2005
(CANEGROWERS)
Safe operating practices for cane harvesting and haulout (Queensland Mechanical Cane Harvesters Association).
RUA AG2321SC A, Operate cane haulage vehicle (National competency standards for sugar cane production).
Information Bulletin VSS, 02.2/694 Cane bin trailers (Queensland Transport).
Safety Guidelines for the Harvest and Transport of Sugar Cane, Part D, Railway Sidings (CANEGROWERS)

1.4 ADOPTION OF EXISTING PRACTICES
The practices and procedures documented in the Code are not the only methods
by which compliance with safe operation may be achieved. In cane transfer operations within
a particular sugar factory’s cane area, there are many practices and procedures which, through
established usage, have been demonstrated to be safe. Where these practices and procedures
differ widely from those of this Code, risk assessment (see Section 1.5 Hazard
Identification and Risk Analysis) must be applied to verify and document any local
requirements and special conditions which may be established by either the sugar factory
management or the contractors. Once an acceptable level of risk for these practices and
procedures has been demonstrated, they can be added to or included in this Code for the
individual sugar factory’s cane area. These local rules and procedures take precedence over
this Code and the Workplace Health and Safety Act takes precedence over both the Code and
local rules and procedures.

1.5 HAZARD IDENTIFICATION AND RISK ANALYSIS
Determination of the matters to be included in this Code must include
identification of hazards which might affect the following:

(a) compatibility of operating systems and procedures between the (harvesting)
contractors and sugar factory workers,
(b) integrity of the haulout equipment during loading and unloading operations,
(c) integrity of the rolling stock and trains during shunting operations,
(d) integrity of the road transport trailers and primemovers,
at a delivery point.

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The level of risk analysis needed for particular factors will not necessarily be the same in all cases. Detailed (risk) analysis may not be required where both the sugar factory and (harvesting) contractors adopt established practices that have been shown to deliver a satisfactory safety performance under equivalent conditions. Risk analysis will, however, be required where changes to the practices are proposed. The minimum requirement in such cases shall be a risk analysis on the elements of the changes.

**Note:** Further guidance on risk analysis may be found in AS/NZS 4360.

1.6 **COMMUNICATION**

Safe operation at a delivery point requires communication among all parties operating at that delivery point on a variety of matters. Standards and procedures prepared in accordance with this Code shall include requirements to ensure that all required communication is undertaken in an effective and reliable way.

1.7 **HANDLING OF EXCEPTIONS**

Should an exceptional circumstance occur at a delivery point, an alternative procedure or operation will be required to maintain activity at the delivery point. Procedures shall be established and maintained to evaluate and then implement promptly, where practical, a proposed alternative operation or procedure. Although safe, such an alternative may normally be precluded by either strict observance of the design of the delivery point or the operating parameters. Normal operations and procedures must be resumed as soon as practical after the exceptional circumstance has ceased.

1.8 **THIRD PARTY ACCESS AND OPERATIONS**

When a delivery point is used and/or maintained by a third party not directly responsible to either the sugar factory management or the contractor, the terms ‘sugar factory management’ or ‘contractor’ shall apply to this third party.

1.9 **ENVIRONMENT**

Cane railway operators and contractors must consider the effect on the environment of their day to day activities. Special attention must be given to operations near schools, hospitals, urban residential areas, farm houses and similar sensitive locations. Locomotive crews must be aware of the nuisance effect of locomotive horns and rotating amber beacon lights during the hours of darkness.

1.10 **MEANING AND INTENT OF TERMS**

For the purposes of this Code of Practice the meaning and intent of the following terms apply.

1. **Contractor**

The term contractor is used to define all members of the cane harvesting sector required to access a delivery point as part of their normal duties. These persons include harvesting contractors and their employees, and cane growers and their employees.

2. **Locomotive crews**

The term locomotive crews includes sugar factory track maintenance workers and on-line maintenance machine operators.

3. **Locomotive**
The term locomotive is used to define the on rail vehicles used exclusively to haul full or empty bin trains for normal operational crushing season requirements. This includes on rail maintenance machines such as tampers, regulators, resleepering machines etc.

4. **Track vehicle**

Any on rail vehicle used principally or exclusively for track maintenance tasks. Track vehicles include tamping machine, ballast regulators, track jacks, resleepering machines, ballast hoppers, inspection (line) cars and locomotives when they are being used exclusively for track maintenance tasks such as hauling ballast hoppers.

5. **Traffic office / Traffic control**

(a) **Crushing season**

The office at the sugar factory from which all on rail movements of locomotives, track vehicles and rail or road maintenance gangs are monitored and controlled principally by two way radio.

(b) **Maintenance season**

During the maintenance season when only work trains and track vehicles are operating, the monitoring and control of all on rail movements and track maintenance gangs may be transferred to another location or responsible worker within the sugar factory or sugar factory area designated by sugar factory management. Where this occurs the term ‘traffic control’ is used to avoid confusion with the traffic office which is a specific factory station. In a general sense the terms ‘traffic office’ and ‘traffic control’ are synonymous.

**For the purpose of this code, the term traffic control is used to define that location where on track movements are authorised and controlled for both the crushing and the maintenance seasons.**

The control of on rail movements within the boundaries of designated worksites may be transferred to the worksite supervisor (ganger) for each particular worksite.

6. **Authorised**

For the purpose of this Code of Practice, authorised shall mean a worker who is considered competent and has permission to operate equipment and/or carry out specific duties at a delivery point.

7. **Worker**

A generic term which includes all persons whose duties require them legitimately to have access to a delivery point. In the context of this Code of Practice the term applies to both milling and field sector workers.

8. **Contractor**

A person(s) involved in the harvesting and/or transport of cane from field to siding, delivery point or loop. For the purpose of this Code a contractor also includes a grower who harvests his/her own cane.

9. **Cane Bin**

A rail vehicle specifically designed to transport harvested cane from the cane fields to the sugar factory. The vehicle consists of a chassis on which a cage to contain the chopped cane is mounted, drawgear is attached to the chassis and
the running gear usually consisting of two wheelsets. Some larger capacity cane bins incorporate two, two-axle bogies. There are no brakes on any cane bins.

10. **Road Bin**

A container carried by a road vehicle for the specific purpose of transporting harvested cane from the field to the factory. The bin may be either permanently fixed to the road vehicle or it may be removable.
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SECTION 2 SAFETY

2.1. OVERVIEW
Safety management of cane transport by both rail and road has a relationship with workplace health and safety. Occupational health and safety is governed by specific legislation and is therefore not the primary objective of this Code. However, the importance of occupational health and safety is recognised within the safety principles of this Code. Safety is an integral part of the job and must be given due consideration in the workplace. Workers are required to exercise care and follow job safe practices at all times. Local conditions and requirements pertaining at individual sugar factories and their delivery points can be added to these procedures.

2.2 PERSONAL SAFETY
Workers are not to expose themselves to danger. Appropriate machine guards must be used. Where safety equipment (such as helmets and glasses), clothing and footwear are provided by the sugar factory or the contractors, those items must be worn as directed. When working in, near or close to trains or rakes of bins, containers or trailers in a delivery point, workers:

- shall not ride on any part of full or empty cane bins, containers or trailers
- shall not ride on the sides of locomotives, brake vans, maintenance machines or road vehicles, except where provision is made for their body to be inside the profile of these vehicles,
- shall not cross the track between coupled cane bins,
- when crossing a line near a stationary rail vehicle, cross not less than three metres from the end of the rail vehicle,
- before stepping out from between or behind rail vehicles, make sure any adjacent track is clear in both directions,
- be aware of trains when working within three metres of the centre line of any track,
- wear high visibility clothing when required by sugar factory management or contractor.

Note: 1. All tasks and duties must be undertaken under the supervision of a suitably qualified worker (see Glossary, Section 6).
2. All injuries, no matter how minor, shall be reported to the worker’s employer.

2.2.1 Protective Clothing and Equipment
Where workers are supplied with personal protective clothing and/or equipment (PPE), this shall be worn by workers when designated by sugar factory management or contractor. Workers must:

- use protective clothing and equipment as necessary for the task,
- make sure protective clothing and equipment is kept in good order and condition,
- report any defects in protective equipment to sugar factory management or the contractor,
- wear footwear consistent with safety.
2.3 SAFETY RESPONSIBILITIES

The crew of a locomotive is responsible for the safe operation of the train during shunting operations at delivery points. Haulout operators are responsible for the safe operation of the haulout during bin transfer operations at delivery points.

2.3.1 Safeworking Principles

No person, other than the locomotive crew or others authorised by sugar factory management or their nominee, is permitted to ride on a locomotive or track maintenance vehicle. No person, other than the haulout driver or others authorised by the contractor, is permitted to ride on a haulout.

2.3.2 Authorisation of Workers

All persons who are required to operate locomotives and rolling stock owned by a sugar factory on its cane railway must be authorised by sugar factory management and have received training in basic cane railway practices and the safety requirements established by that sugar factory. All persons who are required to operate haulouts owned by a grower or contractor must hold current licences relevant to the class of vehicle being operated and must have received a safety induction relevant to the tasks performed during cane transport operations at the delivery point.

2.3.3 Hazardous Substances

Hazardous substances such as bulk chemicals, fuels or fertilisers are sometimes present at delivery points. If an incident occurs which damages any container (drum, bag, tank etc.) containing these substances, special procedures must be adopted to contain any spill and its removal immediately. The type of substance and its potential for personal injury can be determined from the HAZCHEM identification plate which should be attached to the container. Appendix 4 shows a typical HAZCHEM identification plate together with a description and meaning of the symbols on the plate.

2.3.4 Fire Extinguishers (Fire Control)

When a fire occurs, workers must assess the situation to determine if the fire can be controlled by themselves or if assistance is required. Workers must not place themselves in danger when attempting to fight a fire. Workers should minimise the possibility of fire at the delivery points. The fire extinguishers must not be used for any other purpose. When a portable fire extinguisher is discharged, the worker shall:

- not return the portable extinguisher to its bracket,
- return the portable extinguisher and report its use to the employer as soon as possible.

The employer must arrange to have the extinguisher recharged or replaced immediately.

2.3.4.1 Types of Portable Extinguishers, Their Application and Use

The types of fire extinguishers, the kinds of fires and the application of these portable extinguishers are listed in Table 2.1.
Table 2.1 Portable fire extinguishers - types and their application

<table>
<thead>
<tr>
<th>EXTINGUISHER</th>
<th>Portable Fire Extinguisher Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CLASS A</td>
</tr>
<tr>
<td>PRE 1999</td>
<td>From 1999</td>
</tr>
<tr>
<td>WATER</td>
<td>YES</td>
</tr>
<tr>
<td>WET CHEMICAL</td>
<td>YES</td>
</tr>
<tr>
<td>FOAM</td>
<td>YES</td>
</tr>
<tr>
<td>POWDER</td>
<td>NO (A)</td>
</tr>
<tr>
<td>CARBON DIOXIDE</td>
<td>LIMITED</td>
</tr>
<tr>
<td>VAPORISING LIQUID</td>
<td>LIMITED</td>
</tr>
</tbody>
</table>

LIMITED indicates that the extinguisher is not the agent of choice for the class of fire, but that it may have a limited extinguishing capability. Solvents such as alcohol or acetone mix with water and therefore require special foam. (Green text indicates the class or classes in which agent is most effective.)

1. Extinguisher contents are electrically conductive.
2. Non-conductive, but may be dangerous to use in confined spaces.
3. Extinguisher should not be used for fires involving dangerous goods with Hazchem code beginning with the numeral 4. These goods are hazardous in contact with water. Do not use water to extinguish fires in or around vehicles transporting these substances.

2.4 THE IDENTIFICATION OF LOCOMOTIVES AND HAULOUTS

Locomotives, road trucks and haulouts require clear identification when operating at a delivery point.

2.4.1 Visible Warning Devices

All locomotives, brake vans and on-track vehicles must be equipped with amber flashing beacons (either Xenon strobe discharge tube, LED Multiflash or rotating reflector type). The beacon(s) must be mounted on the cabin roof of the vehicle to present an unobstructed view from the surrounding area. The vehicle frames on locomotives and brake vans must have reflective dazzle stripes attached to improve their visibility at night. Cane bins must have reflectors, preferable amber, attached to each (long) side of the bin cage. Additional areas of reflective material may also be applied to cane bins to enhance their nighttime visibility.

All cane haulout vehicles operating within delivery points (rail or road) must comply with all relevant legislation.
2.4.2 Audible Warning Devices

Locomotives and other self-propelled on-track vehicles must have operational audible warning devices such as pneumatic horns or klaxons to signal their presence.

Haulouts should be fitted with operational audible warning devices such as horns to signal their movement and an additional audible warning system when moving in reverse gear.

2.4.3 Communications Equipment

Locomotives must have operational radio transceivers for communication with and identification by the traffic office. Hand-held radio transceivers may be used for communication between a locomotive driver and the driver’s assistant during shunting operations. In exceptional circumstances, a mobile telephone may be used for alternative communication between the locomotive crew and the traffic office. Other communication items include harvesting warning signs and radio-based electronic warning systems (see Sections 4.3.5.2.1 and 4.3.5.2.2). Radio communication between locomotive and harvesting crews may be an alternative method.

2.5 ACCIDENT AND INCIDENT REPORTING

All accidents must be reported immediately by workers to their respective employer. The circumstances and sequence of the events preceding the accident, damage caused and the injuries suffered should be carefully detailed by the workers and recorded by the employer(s). Injuries and damage are usually the results of accidents but near-misses could be fatal at their next occurrence. If accidents and near misses are reported promptly then the employers can take action to eliminate or reduce the possibility of these incidents occurring again.

Accidents can result in loss of life, injury to people and damage to property, equipment and material. Injuries, work-related illnesses or dangerous occurrences must be recorded by the employer.

Where serious bodily injury or work-caused illness results in hospital admission, employers must notify the appropriate authorities (in Queensland, the Chief Executive of the Division of Workplace Health and Safety) within 24 hours of the occurrence causing injury or within 24 hours of becoming aware of the work-caused illness. A detailed record of the injury or illness must be compiled within three (3) days of the event, kept and be available for inspection up to twelve (12) months from the date of the event.

Where injury, work-related illness or a dangerous event causes death, then the employer must immediately notify appropriate authorities (in Queensland, the Chief Executive of the Division of Workplace Health and Safety) promptly by telephone or facsimile and provide a written report on the approved WH&S form within twenty four (24) hours. The accident scene shall not be altered or moved in any way unless action is necessary to provide assistance to any injured persons or to prevent further injury or damage. Appendix 1 provides further descriptions of the Division of Workplace Health & Safety regulations for reporting and recording all types of workplace incidents/accidents.

If an emergency, injury-causing accident or dangerous event occurs when there is a locomotive present at the delivery point the crew of the locomotive may use the locomotive’s radio transceiver to advise the traffic office which will coordinate all necessary responses. This includes calling emergency services and/or the police (see Sections 2.5.1 and

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2.5.4). Growers and harvesting contractors should develop appropriate worker response strategies for times when a locomotive is not present at the delivery point. Harvesting contractors should have response strategies in place for injury-causing and dangerous events at Road Transport dump points located remotely from the cane railway. These responses also apply to Road Transport contractors at cane railway transfer points and remote loading ramps.

2.5.1 Locomotive Crew Duties

When an incident, accident or emergency occurs at a delivery siding, the locomotive crew must follow the factory emergency response procedures which include the following basic steps:

1. assess the situation,
   Note In assessing the situation, the locomotive crew must check for any actual danger or potential danger to themselves then avoid, remove or isolate that danger if possible.
2. advise the traffic office immediately,
3. request emergency services if required,
4. assist any injured persons,
5. record all relevant information for subsequent reporting and investigation.

For a notifiable incident do not move any vehicle, haulout etc. until authorised by a police officer or emergency personnel unless:

- access to provide assistance to any injured persons is required,
- by not moving a vehicle it remains or will increase the danger to people or property.

The crew shall move the locomotive, train or other rail vehicle only when authorised.

Note: Dead human bodies may be moved only on the authority of a police officer.

2.5.2 Advising Traffic Control

The traffic office must be advised as quickly as possible using the locomotive’s two-way radio or by the best available means of communication. The essential information to be relayed to the traffic office includes:

1. the exact location of the incident, accident or emergency,
2. concise description of the incident, accident or emergency, including advice of any Hazchem notification (Appendix 4), together with any request for emergency services,
3. the number of injured persons and the type of injuries if possible.

If livestock has been struck by a locomotive, train or other rail vehicle, a description of the animal together with any identifying marks and brands should also be included in the advice to the traffic office.

2.5.3 Arranging Emergency Services

Once the requirement for and nature of emergency services (e.g. police, fire or ambulance services) to attend the accident have been established between the locomotive crew and the traffic office, the location of and best access route to the accident should be determined by the traffic office and then confirmed with the crew.
2.5.4 Interaction with Emergency Services

The crew must remain at the site of the incident or accident and await further instructions from the traffic office and/or the arrival of the emergency services. The site must be left unchanged as much as possible. However, if the incident/accident occurred on a road crossing, the crew must ensure the roadway is flagged to warn approaching vehicles until emergency services personnel arrive at the site.

The crew must obey all directions from emergency services personnel following their arrival at the accident site.

2.5.5 Reporting

When an accident or incident such as an injury or a breach of safeworking procedures occurs, or the potential for an accident or incident exists, a worker shall report the accident or incident or the potential for an accident or incident to the traffic office.

Where possible, workers at the site should record the registration numbers of all vehicles.
SECTION 3 DELIVERY POINT DESIGN

3.1 GENERAL
The delivery points in a cane transport system form the working interface between a sugar factory’s transport system and the cane harvesting operations. The site location and layout of these delivery points are important for the safe and efficient procedures and operations to transfer harvested cane. The Australian sugar industry uses a wide range of designs for these delivery points to serve both rail and road transport systems. Aspects of the possible configurations and their operational requirements are addressed in this section.

3.2 CONSULTATION
Prior to the alteration of existing delivery points, variation in operations or the establishment of new delivery points, the users of those delivery points should consult, when necessary, with all the appropriate authorities and organisations including:
- the land owner (private or statutory authority) on whose property the delivery point(s) resides,
- local growers and contractors affected by the changes,
- local authorities and boards together with public utilities including:
  - the relevant city, regional and/or shire councils,
  - State Government departments concerned with heritage, native title, the environment, natural resources and transport (both road and rail),
  - utilities providing electrical power, water and communications in the region of the delivery point(s),

These changes to delivery points that require comprehensive liaison specifically exclude routine maintenance of delivery points. However, alterations to certain factors such as drainage or access by haulout vehicles may require liaison. In Queensland, the application of the Integrated Planning Act must be considered, where applicable, and agreement reached prior to the commencement of any work at the points.

3.2.1 Multiple Simultaneous Use
Any additional operating procedures and physical alterations, such as access routes, to allow multiple simultaneous use of a delivery point by more than one contractor will also require liaison amongst all parties.

3.3 TYPES AND CAPACITY
The configurations of the delivery points within a sugar factory’s transport network vary widely depending on capacity and terrain. The more common types are described below.

3.3.1 Rail Delivery Points
These delivery points (sidings) consist of two or more tracks connected to the running lines via a series of turnouts. The typical siding configurations are either loops or fish-tails (see Figure 3.1). For roll-on roll-off operations, one track holds empty cane bins which are collected by the contractors and the other track holds the full cane bins subsequently returned by the contractors.
Figure 3.1 Typical delivery sidings (rail)
Tipper/elevator haulouts can generally use any track in a delivery siding to hold full bins.

The capacity of a delivery siding is frequently limited by topographic constraints such as a creek or road easement or governed by the historical operations of harvesting surrounding the siding. In a fish-tail siding, the cane bin capacities of the full and empty tracks are usually equal. When a contractor changes from roll-on roll-off to tipper/elevator haulouts, the available capacity of that delivery siding doubles - provided there is sufficient access between adjacent tracks for the tipper/elevator haulouts to operate.

### 3.3.2 Road Delivery Points

These delivery points, sometimes called loading pads, pads or designated loading areas (DLAs), consist of an area of hard-stand to which cane is delivered by the various cane harvesting contractors for transfer into either:

- containers, or,
- complete road trailers, including B-doubles.

The configuration of the pad depends on the type of road transport equipment used (Figure 3.2). Both the safety of workers and the equipment together with operational efficiency require that a properly constructed pad be established rather than using farm headlands or even the harvested fields on which to load the harvested cane.

Operations at the pad vary with the type of equipment used. When multi-lift containers are used, these containers are usually arranged in pairs towards the rear of the pad whereas side-transfer containers are generally arranged on stands in line; semi-trailers are arranged more symmetrically while B-doubles require a quite different and larger pad. Tipper/elevator haulouts are used to load either containers or road trailers.

Some pads may include transloading equipment in which harvested cane is tipped from haulouts on to a feed-table from whence this cane is loaded into cane bins. Transloaders generally have limited storage capacity. The design requirements for the transloading equipment are beyond the scope this Code.

The required capacity of a loading pad is governed primarily by the performance of the harvesting operations surrounding the pad and the service time of the road trucks.

### 3.4 Design of New or Alterations to Existing Delivery Points

There are several important factors which must be considered when designing new or altering existing delivery points. These design factors should be based on established codes, documented and recorded. The design factors are listed below and grouped into those for rail-based systems and those for road-based systems.

#### 3.5 Rail Delivery Siding Design

The Code of practice for track and civil infrastructure should form the basis of the design of delivery sidings. The following sections provide additional information.

#### 3.5.1 Location

While the location of a delivery siding is positioned, primarily, to suit the harvesting operations, the following factors should be considered in the design:

- operational safety,
- visibility for vehicles on public roads and along the cane railway running line,
Figure 3.2 Typical delivery points (road)
Figure 3.2 (continued) Typical delivery points (road)
• adequate vehicle turning areas within the siding area,
• sufficient clearance from running line of the cane railway, public road, watercourse, irrigation channel or powerlines
• minimum effects of dust and noise on adjacent residences or buildings
• clear of any road/rail level crossing so that the road is not blocked during shunting operations, and,
• clear of any sensing section of rail on the running line which controls the flashing light system so that the flashing lights are not operated during shunting operations at the siding.

3.5.2 Capacity and Configuration
The required daily capacity of a delivery siding depends on the number, capacity and frequency of harvesting groups delivering cane to the siding and the frequency of locomotive visits as determined by the traffic schedule. The probability of increased siding capacity resulting from future local expansion in production or changed harvester grouping should also be considered when determining the design capacity. In practice, the actual siding capacity will be a compromise among these daily requirements together with the restraints of local topography and land availability. Failure to evaluate these parameters adequately during the design phase may result in significant restrictions for future use.

The configuration of the siding depends, principally, on the types of haulout used at the siding. The roll-on roll-off type requires separate lines, or at least separate sections of line, for empty and full cane bins. Although the tipper/elevator type does not require separate lines, the clearance along at least one side of a rake of cane bins in the siding must be adequate for the unloading operation.

3.5.3 Gradient of In-siding Tracks
The slope (gradient) of the rail tracks within the siding is influenced by the type of haulout used at the siding.
• Tipper/elevator haulouts require level track unless precluded by unavoidable topographical features.
• For roll-on roll-off operations where tractors are used to move bins, the present practice is for the tracks within the siding to be level. Previous practice was to provide a small downgrade towards the dump point for the empty bin line and a similar grade away from the dump point for the full bin line.

Cane bin restraint devices must be provided and used by all parties.

3.5.4 Drainage
Surface, under-track (where applicable) and table drains should be provided to maintain a delivery siding in safe operational conditions by removing water from the access roads, track structure (where applicable) and the delivery siding.

To provide an economical standard for drainage, culvert design should be based on runoff tables for a one in 20 year storm recurrence interval. Culvert outlet velocities should be restricted to 2.5 m/s which will result in minimum problems from scouring. Detailed culvert design procedures are beyond the scope of this Code. Consideration must also be given to the runoff carrying capacity of the drains or channels into which this run-off water is directed.

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Note: in general, scouring will occur if runoff velocities exceed 2.5 m/s. Therefore, scouring protection should be provided on the downstream side of the culvert or pipe. Alternatively, provision for overtopping of the infrastructure should be considered.

3.5.5 Access and In-siding Vehicle Roads
Design and construction of access and in-siding roads shall be in accordance with local conditions having due regard to:

- the types of haulout used at the delivery siding,
- the number of users at any one time (traffic density),
- the angle of approach to running line (For safety reasons, road vehicles should cross at right angles to the track at a point where there is clear visibility in either direction along the running line. When the running line is adjacent to a siding there is an increase in the risk),
- the turning circles for road vehicles using the siding. Appendix 2 shows turning path templates for a range of road vehicles which will provide guidance for infield type haulouts.

The relative heights of in-siding road and rail must be considered to facilitate the removal of spilt cane billets.

3.5.6 Haulout and Road Vehicle Entry Points
The entry points into a delivery siding may be from either public or private road. For entries from gazetted roads the requirements of the road authority must be considered. Where possible, haulouts and road vehicles:

- entering the delivery siding should have clear visibility of any haulouts operating within the siding and any locomotive shunting,
- leaving the delivery siding should have clear visibility of any vehicles approaching on the adjacent public or private roads and the running line.

The geometry of the entry point should be such that, on departure, haulouts and road vehicles avoid as far as is practicable:

- crossing the centre-line of the adjacent public road when turning onto the carriageway,
- crossing and returning over the cane railway running line, or,
- leaving the siding area and turning on adjacent farm headlands, unless previously arranged by written agreement with the grower/landowner.

3.5.7 Turning Areas to Suit Vehicles
The layout of the delivery point depends on the turning circles of the haulouts that will be manoeuvring within the area. The road-base material for the turning and parking areas in delivery sidings should have a minimum thickness of 150 mm in areas where the soaked CBR value of in-situ soils is less than 10. Sub-ballast is required in these instances. Sub-ballast materials should have the following properties:

- minimum soaked CBR 20,
- maximum plasticity index 12 to 18,
- maximum linear shrinkage 8 to 10 per cent,
- grading to suit availability of local materials but typical acceptable grading for sandy/clayey gravels would be 100 per cent passing A.S. Sieve 19 mm.

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3.5.8 **Consignment Note Receptacle**

Any receptacles or structures used for storing and writing information on consignment notes must be positioned at least 3.0m from the nearest rail of any railway track or haulout path within the delivery siding.

3.6 **ROAD DELIVERY POINT DESIGN**

The design requirements for delivery points are similar to those items which applied to haulout access and operation. Safety and operational efficiency both require that a properly constructed pad be established as a delivery point rather than using farm headlands or even the harvested fields on which to load the harvested cane.

3.6.1 **Location**

While the location of a delivery point is positioned, primarily, to suit the harvesting operations, the following factors should be considered in the design:

- operational safety,
- visibility for vehicles on public roads,
- adequate vehicle turning areas within the pad area,
- sufficient clearance from any public road, watercourse, irrigation channel or powerlines.

3.6.2 **Capacity and Configuration**

The required daily capacity of a delivery point depends on the number, capacity and frequency of harvesting groups delivering cane to that point and the frequency of collections as determined by the traffic schedule. This required daily capacity will also vary with the rotation of harvesting within the groups delivering cane to the delivery point. The probability of increased capacity resulting from future local expansion in production or changed harvester grouping should also be considered when determining the design capacity. In practice, the actual capacity will be a compromise among these daily requirements together with the restraints of local topography and land availability. Failure to evaluate these parameters adequately during the design phase may result in significant restrictions for future use.

The configuration of the delivery point depends, principally, on the types of prime-movers servicing the delivery point.

3.6.3 **Pad Construction**

The road-base for the turning and parking areas in a delivery point (the pad) should have a minimum thickness of 150 mm in areas where the soaked CBR value of in-situ soils is less than 10. Sub-ballast is required in these instances. Sub-ballast materials should have the following properties:

- minimum soaked CBR 20,
- maximum plasticity index 12 to 18,
- maximum linear shrinkage 8 to 10 per cent,
- grading to suit availability of local materials but typical acceptable grading for sandy/clayey gravels would be 100 per cent passing A.S. Sieve 19 mm.

The horizontal and vertical profiles of the access road should be such that interference between the prime-mover and its trailer is avoided when traversing the access
3.6.4 Drainage
Surface and table drains should be provided to maintain a delivery point in safe operational conditions by removing water from the access roads and the delivery point.

To provide an economical standard for drainage, culvert design should be based on the predicted runoff tables for a one in 20 year storm recurrence interval. Culvert outlet velocities should be restricted to no greater than 2.5 m/s which will result in minimum problems from scouring. Culvert detailed design procedures are beyond the scope of this Code. Consideration must also be given to the carrying capacity of the drains or channels into which this run-off water is directed.

3.6.5 Public Road Entry Points
Local and State governments may require upgraded entry/exit arrangements on adjacent roads to accommodate the road transport operations. Appendix 3 shows some typical arrangements required in Queensland. The road authority must be consulted during the design process.

3.6.6 Turning Areas to Suit Vehicles
The configuration of the delivery point depends on the turning circles of the vehicles that will be manoeuvring within the pad. Appendix 2 shows the turning path templates for the more common road vehicles used for cane transport.

3.6.7 Consignment Note Receptacle
Any receptacles or structures used for storing and writing the information on consignment notes must be positioned at least 3.0m clear of any truck or haulout turning paths within the delivery point.

3.7 TRANSLOADING POINTS
The process of unloading harvested cane from trucks into the sugar factory’s rail transport system by tipping into a hopper and conveyor system is called transloading. A transloading point may be remote from the sugar factory, for example, at the outer end of the rail network. In this process, the volume of cane in the haulout or truck need not equal the volume of a cane bin. The design parameters for delivery sidings with the exception of the actual cane transfer arrangements generally apply to these delivery points. All equipment designed and used at a transloading point must meet good engineering design and practice standards and comply with the relevant codes, such as AS 1418, Crane and hoist code, Part 1 - General requirements and Part 2 - Serial hoists and winches. Additional requirements for the transloading equipment are given below.

3.7.1 Transfer Equipment
Safety and reliability in operation are of prime concern in the design of this equipment which is generally located remote from the sugar factory. The cane unloading arrangements for the trucks can be either:

- end-tipping from either a body truck or a semi-trailer with a tipper trailer in which unloading is achieved by an on-board multi-stage hydraulic ram, or,
- side-tipping from semi-trailers or B-doubles with cages pivoted along one edge of the trailer and tipped individually using an overhead hoist system.

The capacity of the cane receival chute and transfer hopper should be large enough to
accommodate adequately each tipping action of the truck delivering cane. Adequate guard rails must be provided around the cane tipping area and transfer hopper.

3.7.2 Cane Bin Loading Equipment
The cane bin loading arrangements should allow the operator, usually the motor truck driver, to index and locate the cane bin to be loaded under the delivery conveyor from a control station adjacent to the truck unloading ramp.

3.8 ENVIRONMENTAL REQUIREMENTS
When considering the design of a delivery point, if there are threats of serious or irreversible environmental damage, then careful evaluation must be made to avoid, wherever practical, any serious or irreversible environmental damage. Where appropriate, the assessment of the risks and consequences of the various options must be undertaken. This procedure involves the application of the precautionary principle (see also Section 5, Integrated Planning Act).

3.8.1 Drainage
Consideration must be given to the carrying capacity of the drains or channels into which run-off water is directed (see Section 3.6.4). In addition, any leachate flow from the delivery point which originates from:
- the accumulation of billets, trash and foreign material, or,
- the lubrication of turnouts,
must be prevented from entering local watercourses.

3.8.2 Destruction of Natural or Protected Vegetation and Trees
Wherever possible the natural biodiversity surrounding any proposed delivery point should be retained and the destruction of natural or protected vegetation and trees minimised. Where necessary, any permits required for the establishment of the delivery point must be obtained and displayed in the required manner.

3.8.3 Noise and Dust
The location of a new delivery point and the associated access routes must recognise the environmental effects of noise and dust on any development in close proximity to the delivery point and members of the public. In particular, the effects on schools, hospitals, residential areas and farm houses must be considered.

3.9 OPERATIONAL REQUIREMENTS
The orderly delivery of cane from the harvester to a delivery point and the collection, in harvested sequence, by the sugar factory’s transport system are the basic requirements in the operation of a delivery point. The maintenance of safe operation is of prime importance. The operational requirements for each delivery point must be established by agreement among all parties operating at that delivery point and documented. These requirements should include:
- economic and safe procedures compatible with minimising the time delay from when a load of cane is cut in the field to when that same cane is crushed at the sugar factory. (For delivery sidings in particular, the access of the locomotive to collect the oldest cane first is important.)
- procedures to allow the interchange of cane between factories from within a delivery point,
- procedures to ensure that public road users are not inconvenienced by:

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- blockage of access or public roads for unduly long periods by the locomotive’s shunting activities, and,
- activation of flashing lights at any adjacent level crossing by the train or locomotive during shunting activities.

In most sugar factories’ cane areas, there are likely to be delivery points which do not satisfy all of these conditions. For these delivery points, special procedures which minimise any risk and inconvenience to road users must be developed and documented.

3.9.1 Safety Barriers and Walkways
When a hazard is identified within the boundary of a delivery point, control measures must be provided to eliminate or reduce the effect of the hazard. A risk assessment must be made to determine the level of risk and the appropriate control measures required. Particular hazards may include drains, culverts, pinchpoints, spilt billets, overhead power lines and supporting poles.

3.9.2 Lines of Sight
Tall unharvested cane which restricts sightlines at public or occupational level crossings must be harvested as soon as practical after the start of the crushing season. Likewise, vegetation, trees or fixed infrastructure such as farm sheds, telephone or electrical substations result in restricted sightlines should be removed or appropriate control measures must be developed. These measures may include a ‘stop’ sign on the road approach where the restriction occurs.
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SECTION 4  DELIVERY POINT OPERATIONS

4.1  GENERAL

The prime aim of delivery point operations is to provide the safe, efficient and effective transfer of harvested cane from the in-field transport system to the sugar factory’s transport system. An important factor in this cane transfer is the minimisation of the time delay from when a load of cane is cut in the field to when that same cane is crushed at the sugar factory (cane age or cut-to-crush delay). Hence, the orderly delivery of cane by haulouts to the delivery points and the collection, in harvested sequence, by the sugar factory’s transport system are essential operations.

Efficient and effective communications among the workers operating at a delivery point are essential. The communication modes used can include, verbal, radio and visual (using hand signals) communication. At a delivery siding, haulout crews are not permitted to control locomotive shunting movements; all shunting signals (visual or radio) to the locomotive driver must originate from the locomotive driver’s assistant. However, verbal communication between haulout and locomotive crews is permitted within the delivery siding. Haulout operators must never operate any running line turnouts. To ensure safe railway operations, these turnouts must be operated only by locomotive crews.

Mutual co-operation together with efficient and effective communications between the sugar factory and the harvesting contractors are also necessary for smooth operations at delivery points.

- The sugar factory’s traffic office will advise, as soon as practical, those harvesting groups affected by any changes in the numbers of empty cane bins to be delivered or any delays in delivery times.
- Every harvesting group will advise, as soon as practical, the sugar factory’s traffic office of any cessation in their harvesting operations due to mechanical breakdown or adverse field conditions.

In some cane regions, these communications may be facilitated by direct radio communication between the traffic office and the harvesters. In other regions, mobile phones may provide these communications.

4.2  PROCEDURES

The transport of harvested cane from the field to delivery points requires the seasonal repetitive use of local roads, secondary roads, major roads and highways by haulouts and other road transport haulage units. The safety of roads for all licensed and permitted uses and the requirement of a nuisance-free road system requires operating guidelines which minimise the potential for cane spillage during cane haulage and which establish uniform requirements for compliance with load restraint regulations.

The Workplace Health and Safety Sugar Industry Code of Practice, Railway Safety Supplement Section 5 specifically addresses the obligations of all parties sharing a delivery point.

In the interest of industry efficiency, mutual co-operation must occur and all parties operating at a delivery point should make their operations as efficient as possible and not delay the other parties’ activities. To maintain this safe and orderly system, consignment notes must be completed and placed at the designated location by the agreed time for collection by the sugar factory.

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Tipper and elevator haulout drivers must always fill cane bins, containers or trailers consecutively. Unfilled cane bins, containers or trailers among full cane bins, containers or trailers are not permitted unless special siding procedures have been developed, agreed and documented. Mutual co-operation and communication among all parties working at a delivery point will also ensure safe and efficient cane transfer operations.

The operational factors are listed below and grouped into those for rail-based systems and those for road-based systems.

4.3 SAFETY
The safety of the equipment operating at a delivery siding and the operators of that equipment is of prime importance. Workers must be aware that:

- sidings are shared workplaces,
- potentially dangerous activities and situations can occur,
- there is a mix of infield haulouts and locomotives or large road vehicles,
- the differing activities of each party must interact safely,
- all parties have a responsibility to ensure operational and personal safety.

4.3.1 Alcohol and Drugs
The Traffic Act defines heavy vehicles as those with a gross mass exceeding 3.5 tonnes. This definition includes locomotives, all haulouts and harvesters. The drivers, operators or crew members of these heavy vehicles are required have a zero alcohol level and be unaffected by drugs (prescribed or recreational) at all times while they are working.

Heavy vehicle operators should also be aware that some medications (both prescription and non-prescription) may effect co-ordination or cause drowsiness. Operators taking any form of medication should seek medical advice regarding the effect of such medication on their ability to perform their tasks safely and advise their employer accordingly.

4.3.2 Fatigue Management
Under national and State legislation, the management of fatigue by both employers and the drivers of locomotives and on rail vehicles is required. All parties (the sugar factory and individual contractors) involved with the operations at delivery points must establish their own procedures to address fatigue management.

4.3.3 Equipment Integrity
The equipment operated by all parties at a delivery point must comply with the relevant mechanical standards for safe operation.

4.3.4 Load Restraint - Haulouts and Trucks
Haulout vehicles and road trucks should be loaded and operated in such a manner as to minimise the incidences when cane billet spillage occurs. Cane bins, containers or trailers should be loaded in a manner such that the resulting freeboard (vertical distance from the top rail of the bin *downwards* to the lower edge of the harvested cane peak) is sufficient to contain any settling which, by nature of the trip along roads to the delivery point or from the delivery point to the sugar factory, is likely to occur.
4.3.5 Rail Specific Safety Items

Cane trains operate on a very definite route, being restricted to run on the rail tracks throughout the sugar factory’s cane area. There is no possibility of swerving to avoid an obstacle ahead and the braking performance of a loaded train is also limited. Any part of a vehicle projecting within the envelope of a train’s operations (3.0m from nearest rail) may suffer damage when the train passes by.

4.3.5.1 Train Stopping Distances

The simple design of a cane bin does not incorporate any system of brakes on individual cane bins so that all the mechanical braking forces needed to stop a cane train originate from only the locomotive and a brake van (when attached). In addition, there is no provision for draft gear, and also the bin-to-bin couplings have a considerable degree of longitudinal movement which during braking allows multiple bin to bin impacts, and this in turn leads to reduced locomotive braking.

Typical stopping distances for a loaded cane train running on level straight (tangent) track and consisting of:

- a 32 tonne locomotive,
- 81 full six tonne cane bins,
- with and without an 18 tonne brake van

weighing a total of 600 tonnes and travelling at various speeds can be calculated for average track conditions. These distances are given in Table 4.1 and shown graphically in Figure 4.1.

Based on the information in Table 4.1 and Figure 4.1, the stopping distances for loaded cane trains are extremely long. To ensure safe operation of the cane transport system, road vehicles and haulouts must always give way to cane trains at any road crossing. For the same reason, a harvesting contractor must always advise the traffic office when harvesting cane immediately adjacent to the cane railway. Likewise the traffic office must always be advised when farming operations are taking place adjacent to the running line. Section 4.3.5.2.1 contains further information.

Table 4.1 Example of cane train stopping distances

<table>
<thead>
<tr>
<th>Speed (km/h)</th>
<th>Stopping Distance (m)</th>
<th>Speed (km/h)</th>
<th>Stopping Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With brake van</td>
<td>Without brake van</td>
<td>With brake van</td>
</tr>
<tr>
<td>32</td>
<td>771</td>
<td>900</td>
<td>16</td>
</tr>
<tr>
<td>30</td>
<td>677</td>
<td>791</td>
<td>14</td>
</tr>
<tr>
<td>28</td>
<td>590</td>
<td>689</td>
<td>12</td>
</tr>
<tr>
<td>26</td>
<td>509</td>
<td>595</td>
<td>10</td>
</tr>
<tr>
<td>24</td>
<td>434</td>
<td>506</td>
<td>8</td>
</tr>
<tr>
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<td>364</td>
<td>425</td>
<td>6</td>
</tr>
<tr>
<td>20</td>
<td>301</td>
<td>352</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>244</td>
<td>285</td>
<td>2</td>
</tr>
</tbody>
</table>

Code of Practice for the Operations and Procedures at Cane Railway and Road Transport Delivery Points
4.3.5.2 Signs (Boards) and Devices
To warn of locomotive movements and harvesting activities in progress, signals, signs (boards) and electronic devices are used in some sugar factories’ cane areas to avoid collisions and near-misses.

4.3.5.2.1 Harvesting Warning Signs (Boards)
Trackside signs (boards) are placed by the contractor to indicate to locomotive crews that harvesting and hauling activities are in progress. These signs are used when harvesting activities are close to the running line. They may also be used to identify in-farm road crossings being used regularly by haulouts and infield equipment during harvesting operations.

Harvesting warning signs should be placed to be clearly visible to locomotive crews:

- 3.0 metres from the outside of the rail, and,
- positioned an adequate distance according to the approaching terrain but not less than 300 metres either side of the harvesting site [Local track conditions such as grades and sight distances should be considered when placing these signs].

When communications between locomotive and a harvesting contractor are possible using UHF transceivers, the number of radio channel on which that harvester operates should be added to the lower right corner of those harvesting warning signs placed trackside by that contractor.

Figure 4.2 shows the positioning of a typical harvesting warning sign while Appendix 5 provides dimensioned drawings for two types of harvesting warning signs.
These harvesting warning signs must only be placed beside the track when harvesting is *actually in progress* or when in-farm crossings are being used regularly by haulouts and other farming equipment vehicles, and must be removed once the danger or hazard ceases to exist.

4.3.5.2.2 **Electronic Warning System**

In some cane railway applications, a radio-based electronic vehicle hazard warning system is used. A radio transmitter, mounted in the locomotive, emits a coded warning signal which is received by any road or harvesting vehicles fitted with a selective receiver/decoder. The transmitter is deliberately limited in range so that only vehicles within close proximity (200 to 300 metres) of the locomotive receive a visual warning (flashing light on the vehicle’s dashboard).

4.3.5.3 **Restraint of Cane Bins**

Cane bins left in delivery sidings require restraint to prevent their movement after uncoupling from the locomotive. The rake must be placed clear of any adjacent cane railway tracks or roadways prior to securing. The chocking of the cane bins immediately after delivery to the siding is undertaken by the locomotive driver’s assistant, who must be sure the chocks have been properly placed under the cane bins and that the rake has settled against the chocks before uncoupling the rake from the train. For roll-on roll-off operations, haulout drivers are responsible for chocking cane bins following any movement during their operations at the delivery siding and must ensure there is no possibility of these cane bins moving for any reason including:

- accidental impact by haulouts,
- roll-on roll-off loading and unloading operations,
- locomotive shunting operations, and,
- unexpected high winds.

Mechanical cane bin restraints must be designed to withstand horizontal buffing forces generated during normal siding operations by either locomotives or haulouts.

The methods of restraining cane bins used by sugar factories differ according to the conditions and operating practices. Local procedures must be followed at all times.
Restraints must be placed according to the documented procedures and practices for each individual siding and will vary according to topography and siding use. Methods of restraint include:

- softwood or rubber chocks against wheels,
- hinged steel bin-stops attached to rails,
- chains over buffer assemblies (for long-term restraint).

The most common restraint uses softwood chocks of triangular cross-section. The correct positioning of chocks against the leading wheel rim is shown in Figure 4.3. If more than one chock is required, the additional chocks should always be placed under the wheels of the immediately adjacent cane bin as shown in Figure 4.3. Two chocks should never be placed under the same cane bin. Chocks should be in good condition, not split, and free from oil and grease. Except during roll-on roll-off loading or unloading operations, chocks holding a rake of cane bins must not be moved.

Figure 4.3 Methods for chocking cane bins

4.3.6 Road Specific Safety Items

Road transport operations for cane transport throughout the sugar factory’s cane area must comply with the rules and conditions applying to the road users. All road users have a general duty of care to other road users and must not do, or cause to be done, anything on a road which will cause, or is likely to cause, damage or injury to another road user.

4.3.6.1 Fatigue Management
Under National and State legislation, the management of fatigue by both employers and the drivers of heavy vehicles is required. All parties (the sugar factory and individual contractors) involved with the operations at delivery points must establish their own procedures to address aspects of fatigue management.

4.4 **RAIL DELIVERY SIDING OPERATIONS**

Of prime importance in the operation of the delivery siding are the economic and safe procedures compatible with minimising the cane age. The operating procedures for collecting loaded cane bins should generally ensure the oldest cane is always collected first by the locomotive crew. Mutual co-operation and communication among all parties working at a delivery siding will also ensure safe and efficient cane transfer operations.

4.4.1 **Sugar Factory’s Responsibilities**

The sugar factory is responsible for the operation of the cane transport system from the delivery points to the sugar factory together with the daily allocation of the contractors’ cane bin quotas. The organisation of the harvesting activities within any harvesting group is the responsibility of that contractor and the growers within that group. The sugar factory’s traffic office will advise, as soon as practical, those harvesting groups affected by any changes in the numbers of cane bins to be delivered or any delays in delivery times. In some cane regions, these communications may be facilitated by direct radio communication between the traffic office and the harvesting contractors. In other regions, mobile phones may provide the communications.

The layout of a delivery siding depends on its function and is strongly influenced by the local terrain. The type of haulouts used by the various harvesting contractors operating at the siding can influence the operation and capacity of the siding.

When the empty cane bins are transported to the harvester by loading on a trailer or truck (roll-on roll-off), separate lines may be required for the empty and full cane bins. If there is provision for more than one contractor to operate simultaneously at the delivery siding, the arrangement becomes more complicated. Separate locations are generally allocated within the delivery siding by the sugar factory for each contractor’s operations to maintain separation of the different consignments. Similarly, separate locations are also required within the delivery siding when cane consignments are to be despatched to different sugar factories.

When cane is transported to the delivery siding by in-field transporters and tipped into the cane bins at the delivery siding, the requirement to separate empty and full cane bins is eliminated. Hence, delivery sidings which were designed for roll-on roll-off operation can often be considered to be of almost twice the capacity - provided there is sufficient space between adjacent rail tracks within the siding to allow operations by the in-field transporters. In these sidings, the harvesting contractor must fill the cane bins in sequence (no empty cane bins amongst a rake of full cane bins) to minimise the shunting required for the delivery of additional empty bins and collection of full cane bins.

The sugar factory must establish and document safe re-railing procedures for both full and empty cane bins in sidings. Special attention should be directed to derailments at turnouts within the siding to minimise damage to the turnout mechanism.

4.4.1.1 **Locomotive Crews**

Safe operation must always be paramount in any activity at a delivery siding.
Because the cane railway often runs through the cane fields, harvesting machines and their associated haulouts can be operating close to the track. Locomotive crews must be aware that:

- the visibility of the operators of these machines in the field is often reduced by standing cane and flying trash; and,
- the ability of the operators to hear approaching trains and locomotives is reduced.

Caution must be exercised and the warning devices including the locomotive’s headlights, flashing beacon, horn or radio used when approaching either:

- harvesting operations adjacent to the track, or,
- a delivery point at which cane transfer operations are proceeding, particularly where sight lines are restricted.

The basic practices common to all shunting operations which must be undertaken by locomotive crews at delivery sidings are listed below (see also Code of practice for cane railway operations).

- A close watch must be maintained for farm tractors, haulouts or other vehicles when placing empty cane bins or removing full cane bins from a delivery siding.

- If a haulout is unloading at the delivery siding when a locomotive arrives, the locomotive must wait at the running line turnout until that haulout has finished unloading and departed from the siding. This safe operating procedure applies only to the haulout unloading at the time when the locomotive arrives at the delivery siding. Haulouts which subsequently arrive at the delivery siding must wait until the locomotive has completed shunting operations. **Note:** There are two particular exceptions to these provisions:
  - allowing another train to pass on the running line, or,
  - a crib break when the locomotive may shutdown.

- All incidents, accidents or near-misses which occur within the siding or on the track and result in damage or injury or potential damage or injury must be reported to the factory traffic office.

- Locomotives must only place cane bins between the clearance points of delivery sidings and on the designated empty cane bin lines.

- Empty cane bins delivered to sidings must be left in a safe and secure condition, that is, restrained to prevent their movement. The restraint of empty cane bins following their placement at a delivery siding is the responsibility of the locomotive crew. The locomotive driver must ensure the driver's assistant places chocks against the wheels of the cane bins. The methods of restraining cane bins vary among sugar factories (see Section 4.3.5.3).

- Locomotive crews must minimise the creation of noise and dust during shunting operations at delivery sidings in environmentally sensitive locations.

- Cane bins derailed during shunting operations are the responsibility of the sugar factory and must be re-railed using methods and practices approved by the local sugar factory. If any cane bins are unable to be re-railed, the traffic office must be advised. All derailed cane bins must be clearly identified on the locomotive running sheets for subsequent inspection at the factory cane bin repair shop.

*Code of Practice for the Operations and Procedures at Cane Railway and Road Transport Delivery Points*
• Rakes of cane bins stored in loops or delivery sidings must be separated, where necessary, to provide clear access for any vehicle using recognised roadway or access tracks across such loops or sidings. Care must be exercised that rakes of cane bins are not placed on a track section which forms part of the sending or detection circuit for the flashing lights at an adjacent road/rail level crossing.

• The number of empty cane bins delivered to a siding should be checked against the number shown on the locomotive running sheet. The traffic office must be advised of any variation.

• In all cane railway networks, the common practice is to leave the remainder of the empty cane bins on the running line while delivering a rake of empty cane bins to a delivery siding. Cane bins left on the running line must be securely chocked to prevent those cane bins rolling away. If a brake van is attached to the train, the brake van can be used to hold the rake of empty cane bins and even assist in the re-coupling of the train, provided the track grade allows the parked cane bins to roll towards the locomotive.

• At some sidings, the delivery of empty cane bins into the siding requires the use of a rope attached between the cane bins and the locomotive (loose shunting). In other sections of the rail network, the locomotive has to park the majority of the train in a loop prior to delivering the required number of cane bins to a particular siding.

• Rakes of cane bins must never be stored on running lines for long periods, unless directed to do so by the traffic office.

• After delivering or collecting cane bins from a delivery siding, the locomotive crew must ensure that the turnout at that delivery point is left set for passage of trains on the running line.

• Turnout points leading to the dump point must be reset to direction of dump point.

• Locomotive crews must provide the traffic office with the following information:
  o any damage caused to cane bins or the siding infrastructure, such as turnouts or ball stands,
  o any cane bin fault(s) which may affect the operational reliability. These faults include missing bolts, bearing caps, bent or cracked couplings and drawgear.

4.4.1.2 Light Engines
A locomotive travelling light engine may enter a delivery siding for
• the purpose allowing another train to pass on the running line, or,
• a crib break when the locomotive may be shut down, or,
• other reasons so long as such entry does not interfere with cane transfer operations at the delivery siding.

If the siding is being used for cane transfer operations the harvesting contractor should where possible be advised.

4.4.1.3 Storage of Chocks on Sidings
The locomotive crew should ensure that chocks not in use or left at the siding when cane bins are hauled from the siding are always left in a position parallel to the track.
and not less than one metre from the nearer rail of any track or at the designated storage point where provided.

### 4.4.1.4 Delivery Point Maintenance
The sugar factory will maintain, in a safe operating condition, all rail tracks, turnouts and run-off rails but not the dump points, wheel pits, fish-tails or road transport loading docks or ramps or pads except where local documented agreements differ from this procedure. Generally, the sugar factory will maintain drains unless varied by local agreement and easement conditions. Maintenance of in-siding roads and access roads is governed by local agreements and easement conditions.

### 4.4.2 Grower Responsibilities
The grower is responsible for the provision and maintenance of and safe operating conditions on all headland roads used by harvesting and haulout vehicles alongside the cane railway and delivery sidings.

The width of these headland roads must be such that haulout vehicles and harvesters are always 3.0 m clear of the nearest rail of any track during harvesting and haulout operations.

### 4.4.3 Contractors’ Responsibilities
The contractor is responsible for all the activities of the harvester and haulout drivers including the location of harvesting activities resulting from rotation within the harvesting group. To assist in the effective and efficient operation of the harvest/transport system, the basic practices which should be undertaken by contractors at delivery sidings are listed below.

- The contractor must not permit unauthorised persons *including children* within the delivery siding area during shunting and cane transfer operations.
- All authorised persons operating within the delivery sidings shall have received safety induction relevant to the tasks performed during cane transfer at the delivery sidings.
- Early advice of any delivery siding changes for empty cane bin deliveries due to the relocation of the harvesting group should be provided by the contractor. When early advice is received, the information will be written on locomotive running sheets and locomotive crews advised verbally. If this advice is received by the traffic office after the locomotive has departed from the sugar factory, locomotive crews may be advised of the changes on the sugar factory’s radio network.
- The contractor must contact the traffic office immediately when any cane bins (full or empty) have accidentally moved past the delivery siding clearance points and are foul of the running line.
- Movement of cane bins among sidings is not permitted unless authorised by the traffic office.
- During the crushing season, delivery sidings must only be used for the sole purpose of transferring cane to the cane railway system except, where necessary, to provide access for farm operations.
- All plant and service equipment, when unattended, must always be parked not closer than 3.0 metres from and parallel to the nearer rail of any track.
Every harvesting group will advise, as soon as practical, the sugar factory’s traffic office of any cessation in their harvesting operations due to mechanical breakdown or adverse field conditions. In some cane regions, these communications may be facilitated by direct radio communication or mobile phones between the traffic office and the contractors.

Contractors must ensure that the completed consignment note(s) are available at the delivery siding at the scheduled pick-up time for full bins.

Work practices at the delivery points must be established which will minimise the effects of dust and noise resulting from operations in and around the delivery points, particularly those located in environmentally sensitive locations.

**4.4.3.1 Harvester Operator**
Safe operation must always be paramount in any harvesting activity where people and other vehicles could be present. The basic practices which should be undertaken by harvester operator are listed below.

- Under no circumstances should any part of harvesting machines, haulout equipment or farm implements be operated within 3.0 metres of the nearer rail. If harvesting operations cannot be undertaken without breaching this clearance, special local procedures must be developed and implemented for each individual site whenever harvesting or farming activities are in progress.
- All incidents, accidents or near-misses which occur within the vicinity of the track and result in damage or injury or potential damage or injury must be reported to the employer.
- Harvester crews must advise the traffic office when harvesting is proceeding adjacent to the running line. Information must include specific location and expected duration of the harvesting. Where available, harvesting warning signs (see Section 4.3.5.2.1) should be used.
- Failure of harvesting equipment which will prevent the full cane bin allotment being available at the scheduled pickup time should be advised promptly to the traffic office.
- Trash and leaf matter covering the track reduces the locomotive adhesion capabilities, particularly during brake application which increases the train stopping distance (see Section 4.3.5.1). The contractor must establish procedures to avoid cane billets, trash and leaf matter fouling the track structure to eliminate this potentially dangerous situation.
- Trash, tops, billets and other matter must not be burnt on or near the running line.

**4.4.3.2 Haulout Drivers**
Safe operation must always be paramount in any activity at a delivery siding where people, other vehicles and locomotives could be present. The basic practices common to all delivery operations which should be undertaken by haulout drivers at delivery sidings are listed below.

- Under no circumstances shall haulouts cross the running or any delivery siding lines ahead of a moving locomotive or train. The stopping distances for loaded cane trains are considerable (see Section 4.3.5.1).
- To provide maximum safety, haulouts must only cross the running line at designated in-farm crossing points which have been located by agreement with...
the sugar factory. Where visibility at these designated crossing points is restricted, haulouts must stop no closer than 3.0 metres to the nearer rail and check for approaching trains before proceeding over the crossing.

- When a haulout arrives at a delivery siding, if a locomotive is already shunting, the haulout must not proceed with cane transfer operations until the locomotive has completed the shunting operations and departed from the siding.

- All incidents, accidents or near-misses which occur between a locomotive and a haulout within the siding or on the running line which result in equipment damage or personal injury or could have resulted in damage or injury must be reported to the employer.

- Haulout drivers must re-couple full cane bins delivered to the siding after infield filling immediately. Cane bins not coupled are potentially dangerous. When locomotives remove full cane bins, any uncoupled cane bins can roll forward and cause an accident.

- When re-coupling cane bins in sidings by the haulout driver is not possible because of bin geometry faults, the locomotive crew must be advised so that the crew can take appropriate action, such as moving the rake, to facilitate the re-coupling. Such advice may include marking the consignment note or by communication using telephone or radio.

- For roll-on roll-off operations all empty cane bins must remain coupled as a rake until required to be moved on to infield transport for field filling.

- Only tractors fitted with a pushing attachment approved by the local sugar factory may be used to move cane bins in delivery sidings.

- Haulout drivers must not leave or place full or empty cane bins outside the marked running line clearance points of any line in the delivery siding.

- Cane bins derailed in the siding must be re-railed, where possible, according to local sugar factory practices using an approved method. When cane bins are derailed during cane transfer operations, the contractor is responsible for re-railing those cane bins. If any cane bins are unable to be re-railed, the traffic office must be advised. All derailed cane bins must be identified for subsequent inspection by the sugar factory.

- Cane bins should be filled in sequence (no empty cane bins within a rake of full cane bins) to allow delivery of empty bins and collection of full cane bins with minimum shunting.

- Haulout drivers must provide the traffic office with the following information:
  - any damage caused to cane bins or the siding infrastructure, such as turnouts or ball stands,
  - any cane bin fault(s) which may affect the operational reliability. These faults include missing bolts, bearing caps, bent or cracked couplings and drawgear.

  Chocks not in use or left at the siding when cane bins are hauled from the siding must always be left in a position parallel to the track and no closer than one metre from the nearer rail or at the designated storage point, where provided.

4.4.3.3 Delivery Point Maintenance

The contractor or grower will maintain in a safe operating condition all dump points, wheel pits, fish-tails or road transport load/unloading docks or ramps or pads except where local agreements differ from this practice. Maintenance of in-siding roads and access
roads is undertaken according to local agreements and easement conditions.

The accumulation of cane billets and trash over the tracks and delivery siding turnouts can:

- impede the movement of cane bins and assist in their derailment,
- jam the operation of turnouts, and,
- reduce the locomotive adhesion during shunting.

The contractor must establish procedures to avoid cane billets and trash fouling the track structure to eliminate this potentially dangerous situation. The removal of billets, trash/leaf material and discarded equipment at the delivery siding is the responsibility of the contractors or growers using the delivery siding.

4.5 ROAD DELIVERY POINT OPERATIONS

In the operations at a delivery point, the minimisation of the time period from harvesting to crushing the cane (cut to crush) is of prime importance. The operating procedures for collecting loaded cane trailers and containers must ensure the oldest cane is always collected first by the truck driver. Mutual co-operation and communication among all parties working at a delivery point will also ensure safe and efficient cane transfer operations.

Road transport delivery points include:

- a special purpose loading ramp or pad provided for the purpose of transferring loaded cane bins, containers or like items by road transport to a cane railway siding or other location under the control of the sugar factory;
- cane railway sidings where harvested cane is delivered by a road transport contractor from a remote loading ramp or pad

Remote loading ramps and pads provided and maintained by harvesting contractors, growers or road transport contractors which are not a shared workplace with the sugar factory are outside the scope of this Code.

In this Code, road trucks delivering harvested cane to a railway siding are treated as haulout vehicles and therefore subject to all applicable provisions of Section 4.4.3, 4.4.3.1 and 4.4.3.2.

4.5.1 Sugar Factory’s Responsibilities

The sugar factory is responsible for the operation of the cane transport system from the delivery points to the sugar factory together with the daily allocation of the contractors’ quotas. The organisation of the harvesting activities within any group is the responsibility of that contractor and the growers within that group. The sugar factory’s traffic office will advise, as soon as practical, those harvesting groups affected by any changes in the numbers of cane bins to be delivered or any delays in delivery times. In some cane regions, these communications may be facilitated by direct radio communication between the traffic office and the contractors. In other regions, mobile phones may provide the communications.

If there is provision for more than one contractor to operate simultaneously at the delivery point, separate locations are generally allocated within the delivery point by the sugar factory for each contractor’s operations to maintain separation of the different consignments. Similarly, separate locations are also required within the delivery point when cane consignments are to be despatched to different sugar factories. When economically practical and safe, the oldest cane should always be hauled from the delivery point first.
4.5.1.1 Truck Drivers

Safe operation must always be paramount in any activity at a delivery point where people and other vehicles could be present. Since access to a delivery point often runs through the cane fields, harvesting machines and their associated haulouts can be operating close to the road. Truck drivers should be aware that:

- the visibility of the operators of these machines in the field is often reduced by standing cane and flying trash; and
- the ability of the operators to hear approaching trucks is reduced.

Caution should be exercised and the warning devices including the truck’s headlights and horn used when approaching harvesting operations adjacent to the road.

- A close watch should be maintained for farm tractors, haulouts or other vehicles when placing empty cane trailers and containers or removing full cane trailers and containers from a delivery point.
- All incidents, accidents or near-misses which occur within the delivery point and result in damage or injury or potential damage or injury must be reported to the factory traffic office and the contractor.
- Empty cane trailers delivered to delivery points must be left in a safe and secure condition, that is, restrained to prevent their movement. The restraint of these empty cane trailers at a delivery point is the responsibility of the truck crew.

Truck drivers must minimise the creation of noise and dust during operations at delivery points in environmentally sensitive locations.

4.5.1.2 Delivery Point Maintenance

The maintenance of a delivery point (pad) and the access roads is governed by local agreements and easement conditions.

4.5.2 Contractors’ Responsibilities

The contractor is responsible for all the activities of the harvester and haulout drivers including the location of harvesting activities resulting from rotation within the harvesting group. To assist in the effective and efficient operation of the harvest/transport system, the basic practices which should be undertaken by contractors at delivery points are listed below.

- The contractor must not permit unauthorised persons including children within the delivery point area during cane transfer operations.
- All authorised persons operating within the delivery points must have received safety induction relevant to the tasks performed during cane transfer at the delivery points.
- Early and accurate advice of any delivery point changes due to the relocation of the harvesting group should be provided by the contractor.
- During the crushing season, delivery points must only be used for the sole purpose of transferring cane to the sugar factory or cane railway except, where necessary, to provide access for farm operations.
- Every harvesting group will advise, as soon as practical, the sugar factory’s traffic office of any cessation in their harvesting operations due to mechanical breakdown or adverse field conditions. In some cane regions, these communications may be facilitated by direct radio communication between the traffic office and the contractors. In other regions, mobile phones can provide the communications.
4. Contractors must ensure that the completed consignment note(s) are available at the delivery point by the scheduled pick-up time.

The contractor must establish procedures to avoid cane billets and trash and leaf matter fouling the delivery point.

Work practices at the delivery points must be established which will minimise the effects of dust and noise resulting from operations in and around the delivery points, particularly those located in environmentally sensitive locations. The contractor must establish procedures to avoid cane billets and trash fouling the delivery point to eliminate this potentially dangerous situation. The removal of billets, trash/leaf material and discarded equipment at the delivery siding is the responsibility of the contractor or grower using the delivery point.

4.5.2.1 Harvester Operator

Safe operation must always be paramount in any harvesting activity where people and vehicles could be present. The basic practices which should be undertaken by harvester operator are listed below.

- All incidents, accidents or near-misses which occur within the vicinity the delivery point and result in damage or injury or potential damage or injury must be reported to the employer.

- Harvester operators should advise the traffic office when harvesting is proceeding adjacent to any delivery point access road. This information must include specific location and expected duration of the harvesting.

4.5.2.2 Haulout Drivers

Safe operation must always be paramount in any activity at a delivery point where people, other vehicles and trucks could be present at the same time. The basic practices common to all delivery operations which should be undertaken by haulout drivers at delivery points are listed below.

- All incidents, accidents or near-misses which occur within the delivery point and result in damage or injury or potential damage or injury must be reported to the employer.

- Cane trailers and containers should be filled in a sequence to ensure that the harvested cane is collected in the order it was harvested to minimise the cut-to-crush delay.

- Haulout drivers must provide the traffic office with information describing any damage caused to bins.

4.5.2.3 Delivery Point Maintenance

The contractor or grower will maintain in a safe operating condition all delivery points except where local agreements differ from this practice. Maintenance of access roads is undertaken according to local agreements and easement conditions.

The maintenance of cane transfer infrastructure (road dump points or ramps) for cane railway bins used by mill operated transport will be the responsibility of the mill.

Paths used exclusively for road transport direct to the mill are subject to special maintenance agreements.

The contractor or grower must establish procedures to avoid cane billets and trash fouling the delivery point. The removal of billets, trash/leaf material and discarded equipment at the delivery point is the responsibility of the contractor or grower responsible for creating the condition (see Section 4.7.1).
4.6 FACTORY STORAGE YARD INTERACTION

In some sugar factories, delivery of harvested cane occurs within the factory storage yards. This process may involve:

- roll-on roll-off operations with cane bins,
- direct loading of cane bins by tipper/elevator haulouts, or,
- transloading from body trucks, semi-trailers or B-doubles into cane bins.

In other sugar factories, harvested cane is tipped directly into the cane carrier.

These operations can be considered similar to road operations at delivery points; the responsibilities of the parties are identical to those given in Section 4.4.3.2 except where special factory requirements apply which must include:

- the wearing of Personal Protective Equipment (PPE) as directed,
- speed limits in designated areas,
- specific access and egress routes, and,
- giving right of way to sugar factory vehicles such as mobile cranes.

4.7 MAINTENANCE OF DELIVERY POINT ENVIRONS

Environmental assessment and auditing are acknowledged as essential elements of good environmental management. Although adequate design of a delivery point may address the environmental issues, poor cane transfer operations can violate the environment within and adjacent to the delivery point. All parties involved in the cane transfer operations at a delivery point should ensure they have accurate and current information on environmental performance and legislative compliance. Periodic auditing of the environmental performance of a delivery point will ensure:

- the maintenance of natural and protected vegetation and trees within and adjacent to a delivery point,
- prevention of contamination of creeks and waterways by compliance with respective legislation (see also Sections 3.8.1, 3.8.2, 3.8.3, 4.7.1, 4.7.2 and 4.7.3)

4.7.1 Spilt Cane Billets

Spilt cane billets are a hazard and a danger to personal safety of both haulout drivers and locomotive crews. These billets also represent a financial loss to all parties in the industry.

The contractor or grower is required to remove spilt billets and trash from the area designated as the delivery point at regular and frequent intervals and to dispose of the cane billets in an appropriate manner. Large quantities of spilt cane billets can cause personal injury to haulout drivers and locomotive crews and must be removed or reloaded into cane bins immediately. When cane billets fall within the turnout region they can become lodged in the turnout mechanism or around the switch blade causing jamming. To ensure safe operation these billets must be cleared regularly and frequently.

When an excessive spillage of cane billets occurs, for whatever reason, such spillage should be removed as soon as possible by the operator/driver responsible for hauling that cane so that the cane no longer presents a hazard. In the event of an excessive spillage, all (or other) members of the contractor’s crew shall be notified and appropriate action taken to prevent the recurrence of such spillage.

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4.7.2 Contamination of Creeks and Waterways
Cane transfer activities undertaken at a delivery point must avoid contaminating adjacent creeks and waterways:

- directly with cane billets, trash, foreign material, discarded material, gravel, oil and oil filters, etc. or,
- indirectly with leachate from the accumulation of billets, trash and foreign material within the delivery point.

4.7.3 Removal of Rubbish
Delivery points must be kept free of rubbish and discarded equipment at all times. Broken or unserviceable chocks will be removed by the factory.

4.7.4 Turnout Chair Lubrication
In delivery sidings, lubrication of the turnout mechanisms is necessary. Only dry lubrication or biodegradable vegetable oil shall be used.

4.8 HARVESTING ADJACENT TO THE RUNNING LINE
When harvesting crews are operating close to the running line or frequently crossing the track during harvesting, the potential for an incident to occur is greatly increased. Prior to commencing harvesting, harvesting crews should advise the traffic office of their harvesting activities including:

- the precise location,
- the expected starting time, and,
- the probable duration.

Methods of communication include:

- a telephone or radio call from the contractor to the traffic office early in the morning to advise that harvesting will be in progress at a specific location close to the running line and/or that haulouts will be using specific recognised in farm or public road crossings;
- harvesting warning signs placed beside the track to warn that harvesting is proceeding adjacent to the track (see Section 4.3.5.2.1),

Following the completion of each harvesting period adjacent to the running line, the harvesting crew must:

- advise the traffic office harvesting is no longer operating,
- remove harvesting warning signs, and,
- ensure the running line is clear of trash and cane billets (see Section 4.7.1).

4.9 DEVELOPMENT OF MANUALS FOR INDIVIDUAL SUGAR FACTORIES’ AREAS
The objective of this Code is to establish requirements and to provide guidelines for operations and procedures at cane transport delivery points to comply with the relative requirements of Workplace Health and Safety Code of Practice – Railway Supplement. The Code also addresses applicable elements of AS4292. Because this Code provides only the generic operating procedures to be followed by all parties (factory, grower and harvesting contractor) for the transfer of cane from infield transport equipment to sugar factory’s cane railway or road transport systems, each party may develop their own supplementary documents describing additional specific local procedures which a risk assessment and long

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usage have demonstrated to be inherently safe.

Individual delivery point operating procedures may be developed in conjunction with all the operators within that delivery point. These agreed and documented procedures may vary the generic operating procedures developed for delivery sidings. Similarly, local conditions and requirements pertaining at individual sugar factories can be added to these procedures. These individual manuals may also include:

- layout diagrams including the capacities for both full and empty storage together with the clearance points and,
- any particular operating procedures.
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SECTION 5 CONTROLLING THE RISKS

The safety of operators and equipment is paramount in the cane harvesting and transport activities. All parties have a duty of care to provide a safe workplace and must continually review their activities to control the risk. Figure 5.1 shows the hierarchy of steps that should be used in the analysis of risk. An example of the analysis is given in the section below.

Figure 5.1 Hierarchy of steps in analysing the risk associated with an activity

5.1 HARVESTING ADJACENT TO THE RUNNING LINE

When harvesting crews are operating close to the running line or frequently crossing the track during harvesting, the potential for an incident or accident to occur is greatly increased. The identification of the risks and the possible solutions for this activity are presented in Table 5.1. The acceptability (including cost and feasibility) of the various solutions among the parties requires careful evaluation.
Table 5.1 Example of risk analysis for harvesting adjacent to the running line

<table>
<thead>
<tr>
<th>Item</th>
<th>Possible solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminate the hazard</td>
<td>Remove cane to beyond railway easement and increase headland size to facilitate turning of harvester and haulouts</td>
</tr>
<tr>
<td>Substitute the hazard</td>
<td>Close or relocate the track</td>
</tr>
<tr>
<td>Engineering controls</td>
<td>Install electronic warning system in locomotive</td>
</tr>
<tr>
<td></td>
<td>Install derailing devices</td>
</tr>
<tr>
<td></td>
<td>Install catch points</td>
</tr>
<tr>
<td>Procedural controls</td>
<td>Cease rail operations during harvesting</td>
</tr>
<tr>
<td></td>
<td>Display harvesting boards either side of harvesting activity</td>
</tr>
<tr>
<td></td>
<td>Locomotive and harvester crews communicate directly</td>
</tr>
<tr>
<td>Use personal protection</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

The duty of care requirements of the Workplace Health and Safety legislation means that the person creating the hazard is responsible for its removal or control. This control implies that no cane should be grown within the registered cane railway easement and a headland be provided so that harvesters, haulouts and other farm vehicles do not encroach on the easement during harvesting or farming operations. Where inadequate separation exists between a track easement and a cane block, early in the crushing season, either harvest that block or cut a sufficient number of rows in that block to provide adequate separation between rail and farm traffic.

To provide sight line for both haulouts and locomotives, blocks adjacent to road-rail level crossings and farm roads used for hauling cane should also be planned for cutting early in the season. Alternatively, truncating the corners of these blocks is an acceptable means of controlling the hazard. The Manual of Uniform Traffic Control Devices and the Main Roads Sight Distance Calculator provide details of sight line distances for road and rail vehicle speeds in these circumstances.
SECTION 6   GLOSSARY

For the purposes of this Code, the definitions and explanations of the terms frequently used in the cane transport systems in Australia and used in the associated Codes are listed below in alphabetic order. While some of these terms vary among the various cane growing regions, the more popular interpretations are presented below.

**accreditation.** The recognition of the skills necessary to perform a task/s.

**alcohol.** The term means ethyl alcohol (ethanol). References to use or possession of alcohol include use or possession of any beverage, mixture or preparation containing ethyl alcohol.

**AS.** Australian Standard.

**authorised.** See Section 1.10 (6)

**B-double.** A particular type of truck which is a combination of prime mover and two semi-trailers (see Figure 6.1); present maximum dimensions are: length 25 m and gross combination mass 62.5 tonnes.

![Figure 6.1 B-double road transport vehicle](image)

**ballstand.** See tumbler.

**beacon.** The rotating or flashing orange coloured light mounted on the upper section of a locomotive and some other rail vehicles.

**bin.** See cane bin.

**dump point.** Location within a delivery siding at which cane bins are unloaded (dumped) on the track system of the siding.

**bin trailer.** See cane bin trailer.

**boards.** (See signs).

**brake van.** A heavy vehicle coupled to the last cane bin of a train to provide improved braking capacity. Brake van masses range from 12 to 32 tonnes. The braking actions of a brake van are controlled by the locomotive driver via a telemetry link.
from the locomotive to the brake van. Not all trains have a brake van included in their make-up.

**branch line.** Section of track which branches off the running line to reach into different regions. (See also **main line**).

**cane age.** (See **cut to crush**).

**cane bin (bin).** A rail vehicle specifically designed to transport harvested cane from the cane fields to the sugar factory. The vehicle consists of a chassis on which a cage to contain the chopped cane is mounted, drawgear is attached to the chassis and the running gear usually consisting of two wheelsets. Some larger capacity cane bins incorporate two, two-axle bogies. There are no brakes on any cane bins.

**cane bin trailer (bin trailer).** An agricultural special purpose trailer used to transport chopped cane in bins from a harvester to a delivery siding or road transport dump.

**cane railway.** The network of tracks traversing the cane land surrounding a sugar factory which are used to transport the harvested sugar cane from the fields to the factory.

**chock.** A length of softwood timber, triangular in section, placed in front of the leading wheels of the first (and additionally the second and third) cane bin when required in a parked rake of cane bins to restrain movement of the rake of cane bins in a siding, delivery point or loop.

**clearance point.** The point at which a train or rail vehicle on one track is clear of any traffic which may travel on an adjacent track where the two tracks join.

**consignment note.** A list, completed by the contractor or the haulout drivers, of the cane bins filled and ready for collection at a delivery siding. The consignment note also contains information relating to the grower and the harvested cane. In some areas, the consignment note is called a **weighbill**.

**container.** Holds chopped cane loaded at a delivery point; containers are detachable from transport equipment (in-field, road or rail) and can be stored *separated* from the transport equipment. With suitable mechanical arrangements, containers on trucks can be tipped to unload at a sugar factory or transloading site.

**contractor.** A person(s) involved in the harvesting and/or transport of cane from field to siding, delivery point or loop. For the purpose of this Code a contractor also includes a grower who harvests his/her own cane.

**crew, locomotive crew.** Qualified workers (usually a driver and a driver’s assistant) in charge of the operation of a train.

**cut-to-crush delay.** The time from when a parcel of cane is harvested (cut) to when that parcel is crushed at the sugar factory.

**dangerous event.** See Appendix 1.

**delivery points** (see also **delivery siding**). Locations in a sugar factory’s cane transport...
system to which cane is delivered by the various contractors. In a sugar factory’s rail transport system the delivery points are usually railway sidings (see delivery sidings) and for a road transport system the delivery points are known as pads or designated loading areas (DLAs).

A delivery point is a workplace under the control of the sugar factory. Therefore the sugar factory has a responsibility to establish the safe working practices and standards of infrastructure for these workplaces. The obligation of the organisation or person in control of a workplace is:

- to ensure the risk of injury or illness from a workplace is minimised for persons entering the workplace to work,
- to ensure the risk of injury or illness from any plant (machinery) or substance (chemical) provided by any person for the performance of work by someone other than workers of the person in control is minimised when used in a proper manner,
- to ensure there is appropriate, safe access to and from the workplace for persons other than the workers of the person in control.

Workers and any other person entering or using the workplace have the following obligations:

- to comply with the instructions given for workplace health and safety at the workplace by the sugar factory management, grower and harvesting contractor,
- to use personal protective equipment e.g. safety boots, high visibility clothing, eye protection and head protection when required,
- not to interfere wilfully or recklessly with or misuse anything provided for workplace health and safety at the workplace,
- not to place at risk wilfully the workplace health and safety of any person at the workplace, and,
- not to injure himself or herself wilfully.

delivery siding. A delivery point within a sugar factory’s cane railway network to which cane is delivered by the various contractors. Delivery siding and delivery point are mutually interchangeable in cane railway terms.

DLA. Designated loading area; the delivery points within a sugar factory’s road transport network to which cane is delivered by the various contractors. (See also pad).

draft gear. A mechanism forming part of the coupling system in a rail vehicle which absorbs a portion of the longitudinal force acting on that vehicle and reduces the transmission of that force to adjacent vehicles.

driver, locomotive driver. A worker qualified and authorised to drive a locomotive for a particular sugar factory.

driver’s assistant. A worker qualified and authorised to assist the locomotive driver in all aspects of locomotive and train operations.

drug. The term means any substance (other than alcohol) that has known mind or
function-altering effects on a human being, specifically including any psychoactive substance and including, but not limited to, controlled substances and prescribed medications.

dump point. The location in a delivery siding at which roll-on roll-off operations occur. There may be more than one dump point in a delivery siding (see Figure 3.1). The arrangement of dump points varies depending on the types of haulouts servicing the delivery siding.

electronic warning system. A radio-based electronic vehicle hazard warning system. In cane railway applications, a radio transmitter mounted in the locomotive emits a coded warning signal which is received by any road or harvesting vehicles fitted with a selective receiver/decoder. The transmitter is deliberately limited in range so that only vehicles within close proximity (200 to 300 metres) of the locomotive receive a visual warning (flashing light on the vehicle’s dashboard).

employer. The person or organisation providing employment for monetary gain to a worker or group of workers.

- For locomotive, on-track vehicle and track maintenance crews, the employer is the particular sugar factory.
- For haulout operators, the employer is the contractor or grower(s) contracted (as a harvesting group) to harvest the cane.

ensure. To take all reasonable actions in so far as controllable factors will allow.

far end. The end of a fish-tail siding which is remote from the siding connection to the running line. (See also delivery siding).

foul. When a vehicle or object is not sufficiently clear of an adjacent running line, for example, a rail vehicle standing too close to a set of points.

full cane bin. A cane bin filled with chopped cane. A rake of full cane bins is often referred to as fulls. [A rake of empty cane bins is often referred to as empties.]

group. The harvesting operations of one or more growers undertaken by a single contractor are considered as a group for the harvest control and cane transport operations. There are many groups operating daily within a cane production area.

grower. A person involved with the growing, harvesting and delivery of sugar cane to a designated delivery point. For the purposes of this code of practice, a grower who harvests only his/her own cane is called a contractor.

harvesting contractor. See contractor.

harvesting warning sign. A trackside sign placed to indicate to locomotive crews that harvesting and hauling activities are in progress. (See also signs and Appendix 3).

haulout. A (heavy) vehicle used to transport harvested cane from the fields to a cane delivery point. Haulouts range from purpose-built vehicles which discharge cane directly
into cane bins or road trailers at the delivery point, through tractor-trailer units to rigid-body and articulated trucks on which the cane bins are transported into the fields to be filled. (See also roll-on roll-off). The haulouts are operated by the growers or contractors.

**Hazchem code.** A code adopted by the United Nations to identify the emergency action in relation to dangerous goods.

**horn.** Any horn, hooter, klaxon, whistle or other audible sound warning device on a locomotive, other power units or on-track machines.

**Integrated Planning Act (IPA).** A Queensland Act (1997) for a framework to integrate planning and development assessment so that development and its effects are managed in a way that is ecologically sustainable by:

- co-ordinating and integrating planning at the local, regional and State levels,
- managing the process by which development occurs,
- managing the effects of development on the environment (including managing the use of premises).

This Act's purpose includes:

(a) ensuring decision-making processes
   (i) are accountable, coordinated and efficient,
   (ii) take account of short and long-term environmental effects of development at local, regional, State and wider levels,
   (iii) apply the precautionary principle, and,
   (iv) seek to provide for equity between present and future generations,

(b) ensuring the sustainable use of renewable natural resources and the prudent use of non-renewable natural resources

(c) avoiding, if practicable, or otherwise lessening, adverse environmental effects of development,

(d) supplying infrastructure in a coordinated, efficient and orderly way, including encouraging urban development in areas where adequate infrastructure exists or can be provided efficiently,

(e) applying standards of amenity, conservation, energy, health and safety in the built environment that are cost effective and for the public benefit,

(f) providing opportunities for community involvement in decision making.

The precautionary principle is the principle that, if there are threats of serious or irreversible environmental damage, careful evaluation must be made to avoid, wherever practicable, serious or irreversible environmental damage including, if appropriate, assessing risk weighted consequences of various options.

**Natural resources** includes biological, energy, extractive, land and water resources that are important to economic development because of their contribution to employment generation and wealth creation.

**level crossing.** The intersection of a roadway and a railway track or two separate railway tracks at the same level.
light engine. A locomotive (engine) or locomotives and/or a brake van coupled, without cane bins attached, working as a train.

loading pad. See pad.

loading ramp. A formed earth embankment which allows in-field transporters or trucks to unload harvested cane into trailers or cane bins.

locomotive run. The term used for a single round trip for a locomotive:
- commencing at the sugar factory from the empty yard with a rake of empty cane bins,
- delivering those bins to various sidings on the outbound movement,
- collecting full cane bins at several sidings on the inbound movement and
- delivering a rake of full cane bins to the full yard.
In road transport operations, a similar run is undertaken by a road truck. However, the road truck can only deliver and collect one or two trailers (B-double) in a run.

locomotive running sheet. The document carried by the locomotive crew describing the work required for that locomotive’s run. (See locomotive run).

loop (passing loop or loop line). A portion of track connected at either end to the running line used for trains to pass or shunt. This track is primarily a running line, not a siding.

main line. See running line

may. The word may indicates the existence of more than one option and shall be read as advisory.

medications and drugs. The Queensland Traffic Act defines locomotives and cane trains as heavy vehicles. Haulouts are also classed as heavy vehicles. The operation of such vehicles is subject to the regulation: drivers, operators or crew members shall have a zero blood alcohol reading at all times while on duty. Crew members who are taking prescribed medications, which could affect the performance of their duties, should advise their supervisor prior to commencing their duties.

mill end. The end of a fish-tail siding which is closer to the siding connection to the running line. (See also delivery siding).

must. The word must indicates that the action, process or parameter is mandatory.

near-miss. An incident which almost resulted in an accident which could have caused serious injury or death.

occupational crossing. A section of track over which farm roads and access tracks cross the cane railway.

pad (loading pad). The delivery point within a sugar factory’s road transport network to
which cane is delivered by the various cane harvesting contractors for transfer into either:

- containers (capacity: up to 23.5 tonnes),
or,
- complete road trailers, including B-doubles.

The design of and operations at a pad depend on the type of road transport equipment used. (See also DLA). These pads are a prepared area of road-base capable of sustaining tight turning operations by in-field transporters and trucks.

points. See turnout.

PPE. Personal protective equipment.

qualified worker. A worker who is qualified by examination to undertake specific tasks.

railway. A guided system designed for the movement of rolling stock, which has the capability of transporting freight (exclusively harvested cane in a cane railway) on a track together with the associated infrastructure and sidings.

rake. A collection of either full or empty cane bins coupled together to form a continuous string.

roll-on roll-off. Empty cane bins at a delivery siding are rolled on to a tractor/trailer or road truck at a siding, transported to the fields to be filled directly under the harvester and then returned to the siding and rolled off to stand in the siding awaiting collection.

rolling stock. Any vehicle (including cane bins) which operates on or uses railway tracks.

run. (See locomotive run).

running line. The sections of track along which through railway traffic operates. In the context of this Code, the definition includes branch lines but not sidings.

schedule. The details of all train movements, including the delivery of empty cane bins and the collection of full cane bins at sidings and loops, throughout a cane railway network over a 24 hour period, usually commencing at midnight. A similar procedure is developed for road transport in which the road trucks haul cane from delivery points to a sugar factory.

serious bodily injury. An injury that:

- causes death, or,
- impairs a person to such an extent that, as a consequence of that injury, the person becomes an over-night or longer patient staying in a hospital.

shall. The word shall is to be understood as mandatory.

should. The word should is to be understood as non-mandatory, that is, advisory or recommended.

shunt. The movement of trains or rail vehicles for the purpose of marshalling or altering the make-up of the train.

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siding. A section of track other than the running line, used for shunting, the storage of rolling stock and the transfer of harvested cane. (See also delivery siding).

signs. Trackside signs conveying instructions to train crews necessary for the running of trains or the limits of train movements. Harvesting warning signs are placed beside the track to signal the use of some obscured occupational crossings during harvesting or when a harvester is working beside the running line.

sugar factory practice. The standard practices, rules, instructions and policies established by the management of an individual sugar factory for the cane transport system owned and operated by that particular sugar factory. A particular sugar factory’s practice will take precedence over any corresponding practice established in this Code.

switch blade. A switch blade is a length of rail which is pivoted at one end and can be moved between either of two positions to form a continuous rail over which wheels can run through the turnout. Switch blades are normally used in pairs (one left hand and one right hand), one only of which is operative at any one time to guide the wheels of rail vehicles. (See also turnout).

tipper/elevator (haulout). A purpose-built vehicle which collects harvested cane directly from a harvester and discharges that cane directly into cane bins or road containers/trailers at the delivery point.
- The tipper design elevates and rotates a container to tip the chopped cane directly into a cane bin or road transport container/trailer.
- The elevator design uses slat conveyors or belts to propel the chopped cane directly into a cane bin or road transport container/trailer.
These vehicles range from tractor-trailer units through to rigid-body and articulated units.

tractor/trailer (haulout). The arrangement of a tractor towing a purpose-built trailer for transporting chopped cane from field to delivery point. The trailer design may be either:
- roll-on roll-off for one (single) or two (double) cane bins, or
- tipper/elevator.
The roll-on roll-off units operate exclusively to delivery sidings while tipper/elevator units can service both rail and road delivery points.

traffic office. The central control office which co-ordinates all movements and occupancy authorities of trains within the factory’s rail network. In a road transport system, the movement of road trucks is also co-ordinated directly or indirectly by the traffic office.

train. A single unit of rolling stock (cane bin) or two or more units coupled together, at least one of which is a locomotive.

train [locomotive] crew. A driver, in charge of the locomotive at the time and any qualified assistants provided on the train, or a track vehicle supervisor in charge of on-track machines when travelling under train working regulations.

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**transloading.** The process of unloading harvested cane from trucks into the sugar factory’s rail transport system by tipping into a hopper and conveyor system (transloader). In this process, the volume of cane in the haulout or truck need not equal the volume of a cane bin or road vehicle.

**truck.** A road vehicle.

**truck ticket.** See consignment note.

**tumbler (or ballstand).** The mechanism (See Figure 6.2) used to change a turnout from one position to the other.

**turnout.** An arrangement of trackwork which provides for one track to diverge into two or conversely for two tracks to converge into one. A turnout enables rolling stock to move from one track to another. In the sugar industry, turnouts are sometimes referred to as points. Initially one of the two tracks making up a turnout will be considered straight although this is not necessarily so. Figure 6.3 shows the major components.

**turnout chair.** The housing for the mechanism which operates the movement of a turnout. (See Figure 6.3).

**work.** An action or effort directed to produce or accomplish something.

**work caused illness.** See Appendix 1.

**work injury.** See Appendix 1.

**worker.** Any person who is employed at a sugar factory or by a contractor. (See also qualified worker, authorised).

**workplace.** The area necessary to perform work for a specific purpose for a specified time.

**supervisor.** The worker in charge of a workplace and responsible for safety of personnel at that site and ensuring that the site is safe for operations.

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**Figure 6.2 Tumbler (or ballstand)**
Figure 6.3 Turnout components

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APPENDIX 1

IRREGULARITIES – NOTIFIABLE INCIDENTS

This Appendix is an edited version of relevant clauses of Section 7 of the Code of Practice for Cane Railway Operations which apply for the Division of Workplace Health and Safety requirements for reporting and recording workplace incidents and accidents.
7.8.4 Irregularities - notifiable incidents

A worker shall report immediately to the traffic office, any incident involving serious bodily injury, a dangerous event, derailment, collision on or near the running lines. Initially sufficient details need only be given to enable the early dispatch of any emergency assistance if required. Also this preliminary advice must be followed, at the first opportunity but within 12 hours, with full written details:

Note: Section 7.8.4.1 includes descriptions of serious bodily injury and a dangerous event as defined by the Workplace Health and Safety Act 1995.

The traffic office shall advise all those concerned immediately and subsequently, by the end of shift, prepare an appropriate report of the circumstances of the incident for factory management in accordance with the local sugar factory practice. The basic information required for reporting incidents, accidents and irregularities can be categorised as follows:

1. name of owner(s) or operators(s) involved and contact person,
2. date, time and location of the incident,
3. train or trains involved and details of locomotive(s) and crew(s),
4. brief description of incident,
5. name(s) and address(s) of person(s) involved,
6. registration number(s) of vehicles involved together with names, addresses and vehicle registration numbers (if applicable) of all witnesses,
7. weather conditions,
8. condition of access to site e.g. in cutting, on embankment, flooded, muddy etc.,
9. broad classification of cause, e.g.
   o operations failure,
   o rolling stock defect,
   o track defect,
   o other infrastructure defect,
   o other party at fault.

7.8.4.1 Notification requirements for workplace injuries and events

Serious bodily injury causing death

The Workplace Health and Safety Regulation 1997 mandates notice to be provided following an incident which results in the death of a person within the time limits set out below:

(a) Promptly by telephone or facsimile followed by
(b) In writing on the approved form within 24 hours.

In addition to an injury causing death the regulation also defines the meaning of serious bodily injury to mean:

(a) an injured person’s death, or
(b) the loss of a distinct part or organ of the injured person’s body, or
(c) the injured person to be absent from the person’s voluntary or paid employment for more than four days.

The reporting requirements for these injuries are identical to (b) above.

Other injuries
The Workplace Health and Safety Regulation 1997 Part 7 also mandates the reporting requirement for injuries, illnesses and events which are defined by the Regulation as **Work Injuries**, **Work Caused Illnesses** or **Dangerous Events**. These are defined by the Regulation to mean:

**A Work Injury**

(a) an injury to a person that required first aid or medical treatment if the injury was caused by a workplace, a relevant workplace area, a work activity, or plant or substances for use at a workplace; or

(b) the recurrence, aggravation, acceleration, exacerbation or deterioration of an existing injury in a person if
   i. first aid or medical treatment is required for the injury; and
   ii. a workplace, a relevant workplace area, a work activity, or plant or substances for use at a workplace caused the recurrence, aggravation, acceleration, exacerbation or deterioration; or

(c) any serious bodily injury, if the injury was caused by a workplace, a relevant workplace area, a work activity, or plant or substances for use at a workplace.

**A Work Caused Illness**

(a) an illness contracted by a person in which a workplace, a relevant workplace area, a work activity, or plant or substances for use at a workplace was a significant contributing factor; or

(b) the recurrence, aggravation, acceleration, exacerbation or deterioration in a person of an existing illness if a workplace, a relevant workplace area, a work activity, or plant or substances for use at a workplace was a significant contributing factor to the recurrence, aggravation, acceleration, exacerbation or deterioration.

**A Dangerous Event**

An event caused by specified high risk plant, or an event at a workplace or relevant workplace area, if the event involves or could have involved exposure of persons to risk to their health and safety because of

(a) collapse, overturning, failure or malfunction of, or damage to, an item of specified high risk plant; or

(b) collapse or failure of an excavation or of any shoring supporting an excavation; or

(c) collapse or partial collapse of any structure; or

(d) damage to any load bearing member of, or the failure of any brake, steering device or other control device or, a crane, hoist, conveyor, life or escalator; or

(e) implosion, explosion or fire; or

(f) escape, spillage or leakage of any hazardous material or dangerous goods; or

(g) fall or release from a height of any plant, substance or object; or

(h) damage to a boiler, pressure vessel or refrigeration plant; or

(i) uncontrolled explosion, fire or escape of gas or steam.

The Workplace Health and Safety Regulations 1997 Part 7 requires a written record on the approved form to be made within three days of any of the following incidents occurring in the workplace:

(a) A work caused injury

(b) A work caused illness

(c) A dangerous event.

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All records must be kept for one year after they were made.

The basic information which shall be recorded for these events and injuries includes:

1. **Type of Injury**: serious bodily injury, work caused illness or dangerous event;
2. If a **death** occurred this shall be recorded;
3. **Details of Injured person**: Name; Residential Address; Date of Birth; Sex (Male or Female);
4. **Basis of employment**: Full Time; Part Time; Casual; Volunteer; Member of Public; self-employed; Other;
5. **Type of Employment**: Detail Occupation; and indicate whether the person is involved in Administration; Technical; Tradesperson; Professional; Apprentice/trainee; Student or Other.
6. **Nature of work injury or caused illness**: e.g. fracture, sprain and strain, burns, etc.
7. **Bodily location of injury or caused illness**: e.g. back, eye, hand.
8. **Medical Treatment**: nil, first aid, doctor only, hospital admitted to (if overnight);
9. **Mechanism of injury/disease**: Falls, trips and slips, Hitting object with part of body, Heat radiation and electricity, Sound and pressure, Body stressing, Chemicals and other substance, Biological factors, Mental stress, Other and unspecified mechanism of injury.
10. **Agency of injury/disease**: Machinery and (mainly) fixed plants; Powered equipment tools and appliances; Chemical and chemical products; Mobile plant and transport; Non-powered handtools appliances and equipment; Materials and substances; Animal, human and biological agencies; Environmental agencies; and other and unspecified agencies.
11. **Details of how incident occurred**: Date of Incident; Time of incident; Description of incident (attach report) -collision between: locomotive and/or cane bins; locomotive and farm vehicle; locomotive and a road vehicle or persons at a level crossing; locomotive and any other obstruction that causes damage; derailment of locomotive(s), cane bins; dangerous goods resulting in: explosion, fire or spillage.

### 7.8.4.2 Other accidents and incidents

The standard requirements for incidents and accidents which must be recorded by an owner or operator, or both, to enable satisfactory monitoring and analysis of safety related occurrences are described below. The items in this category are generally minor accidents or occurrences which constitute a breakdown in the normal safety defences which, if ignored, could have the potential to lead to a serious accident:

1. other personal injuries (other than dangerous events as listed in Section 7.8.4.1),
2. unauthorised passing of a designated check point,
3. failure of items of signalling or other safeworking equipment that endangers or could endanger the safe operation of the railway,
4. breach of safeworking procedures,
5. an incident at or near a level crossing that compromises safe operation of cane railway traffic or the safety of the public,
6. failure of a bridge or elevated structure (or part of a bridge or elevated structure) that endangers or could endanger the safe operation of the railway,
7. runaway cane bins,
8. an incident involving rolling stock including:

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o hotboxes,
o dragging equipment,
o drawgear or coupling failures during travel,
o wheel or axle failure,
o brake system failure
  o any other rolling stock failure that has the potential to cause a serious accident,
9. an incident where an animal large enough to damage a motor vehicle is struck by a train on a track or in the vicinity of a track,
10. fire affecting rail infrastructure or rolling stock that endangers or could endanger the safe operation of a railway,
11. track defect that has the potential to cause derailment by:
  o very wide gauge,
  o excessive horizontal (line) misalignment,
  o excessive vertical (top) misalignment,
  o broken rail,
  o any natural occurrences (e.g. wash away),
12. any appearance or occurrence of:
  o defect in a civil infrastructure item (underpass, tunnel culvert etc.) that has the potential to cause an accident unless immediate corrective action is taken,
  o any other defect with the potential to cause an accident unless immediate corrective action is taken,
13. security related matters including acts of trespass, vandalism, malicious damage, suspicious activity and unsecured safeworking equipment.

7.8.5 Accident/incident recording and investigation
All accidents and incidents shall be recorded using the relevant accident/incident reporting forms particular to each individual sugar factory. Typical report forms for the various events, accidents and incidents are shown in Figures 7.2 and 7.3.

All accidents and incidents must be investigated to determine their cause and to establish actions and procedures which will minimise the probability of any recurrence.

7.8.6 Particular requirements for road/rail level crossing incidents
When an incident occurs on or at a road/rail level crossing between a locomotive, train or track vehicle and a road vehicle, the procedures set out below must be followed except where alternatives, authorised by the local sugar factory management, apply.

These procedures apply to any of the following incidents:

- accidents involving members of the public and/or property damage,
- person contact with a locomotive and/or cane bins, brake van or track vehicle
- vehicle contact with a locomotive and/or cane bins, brake van or track vehicle, and,
- property contact with a locomotive and/or cane bins, brake van or track vehicle

7.8.6.1 Responsibilities of locomotive and track vehicle crews
All locomotive and track vehicle crews have the responsibility to avoid situations that could result in an accident. When an accident involving the locomotive or track vehicle occurs the procedures described below shall apply:

1. The traffic office shall be advised via the two-way radio (or otherwise by the best available means of communication) of the accident, the exact location and if ambulance or other emergency services are required.
2. If the accident occurred on a road crossing, the crew shall ensure the roadway is flagged to stop approaching vehicles until emergency services/police arrive.

3. The registration numbers of all vehicles and the names and addresses of each person involved in the accident shall be recorded. The names and addresses (and/or vehicle registration numbers) of any independent witnesses must also be obtained.

4. If the accident involves vehicles carrying hazardous substances the procedure in Section 2.3.4 shall be followed.

5. Unless necessary to provide emergency treatment to injured persons or animals, the accident site shall remain unaltered until all investigations by police or other responsible persons are complete. No vehicle (road or rail) at the accident site is to be moved unless authorised by the appropriate authority.

6. No liability, on behalf of either the locomotive or track vehicle crew or the sugar factory, must be admitted.

7. Locomotive and track vehicle crews shall remain at the site of the accident until authorisation to depart has been given by the appropriate emergency authority.
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APPENDIX 2

TURNING PATH TEMPLATES
FOR ROAD VEHICLES
TURNING PATH TEMPLATES

The turning path templates for the following vehicles:

- single unit truck,
- prime-mover and semi-trailer,
- prime-mover and long semi-trailer, and,
- B-double,

at two conditions:

1. 12.5 m minimum radius and turning speed up to 5 km/h, and,
2. 15 m minimum radius and turning speed 5 to 15 km/h,

are shown on the following pages. The templates have been extracted from AUSTROADS Design Vehicles and Turning Path Templates (1995).
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AUSTROADS
DESIGN SINGLE UNIT TRUCK / BUS (12.5m)
SCALE 1 : 200
Radius 12.5m
ABSOLUTE MINIMUM RADIUS
For use at mandatory stop only.
Turning speed up to 5km/h.

Notes:
1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
AUSTROADS
DESIGN SINGLE UNIT TRUCK / BUS (12.5)
SCALE 1 : 200
Radius 15.0m
DESI RABLE MINIMUM RADIUS
Turning speed 5 - 15km/h.

Notes:
1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
AUSTROADS
DESIGN PRIME MOVER & SEMI - TRAILER (19.0m)
SCALE 1 : 200
Radius 12.5m
ABSOLUTE MINIMUM RADIUS
For use at mandatory stop only.
Turning speed up to 5km/h.

Notes:-
1. Locate face of kerbs at least 0.6m clear of wheel paths.
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.

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AUSTROADS
DESIGN PRIME MOVER & SEMI - TRAILER (19.0m)
SCALE 1 : 250
Radius 15.0m
DESiRABLE MINIMUM RADIUS
Turning speed 5 - 15km/h.

Notes: 1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
Notes:
1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
3. Shaded areas indicate turns applicable in off-road situations only.
Radius 15.0m
DESI RABLE MINIMUM RADIUS
Turning speed 5 - 15km/h.

Notes:-
1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
3. Shaded areas indicate turns applicable in off-road situations only.
Radius 12.5m
ABSOLUTE MINIMUM RADIUS
For use at mandatory stop only.
Turning speed up to 5km/h.

Notes:-
1. Locate face of kerbs at least 0.6m clear of wheel paths
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.
3. Shaded areas indicate turns applicable in off-road situations only.
AUSTROADS
B - DOUBLE (25.0m)
SCALE 1 : 250
Radius 15.0m
DESIURABLE MINIMUM RADIUS
Turning speed 5 - 15km/h.

Notes:-
1. Locate face of kerbs at least 0.6m clear of wheel paths.
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.

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APPENDIX 3

DELIVERY POINT ACCESS DESIGN
FROM PUBLIC ROADS
ROAD ACCESS REQUIREMENTS

Typical designs for road access for road vehicles hauling cane from delivery pads are presented below.

MINOR ACCESS REQUIREMENTS

Typical designs for road access for road vehicles hauling cane from delivery pads are presented below.

CASE HISTORY

Road A

A

B

Existing Road

Centre of Road

or Centre of Lane

* REMOVE VEGETATION AND
EMBANKMENT TO LEVEL SHOWN BELOW

VISIBILITY TRIANGLE ~ Section A - A

CROSS SECTION ~ Section B - B

NOTES
1. Sloping endwall only required where dimension ‘Y’ is less than 9m. With dimension ‘Y’ over 9m, a square endwall is acceptable (each case to be considered individually).
2. The fall through pipe is not to be less than 50mm.
3. Guide posts of an approved type are to be placed on each side of the access (Rural area only).

THIS DRAWING TO BE READ IN CONJUNCTION WITH M.R.D. SPECIFICATIONS AND CONDITIONS
Ref. MS 4-4 (06/96)

APPROVED: DRAWN: JMC

DWG. MS 4-5 (08/96)

Main Roads

Sugar Milling
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Code of Practice for the Operations and Procedures at Cane Railway and Road Transport Delivery Points

**Design Speed**

<table>
<thead>
<tr>
<th>DESIGN SPEED (km/h)</th>
<th>INTERSECTION SIGHT DIST. (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>115</td>
</tr>
<tr>
<td>80</td>
<td>175</td>
</tr>
<tr>
<td>100</td>
<td>250</td>
</tr>
</tbody>
</table>

*Measured from a point 9.0m from £ of Through Road

**Vertical Alignment of Access**

- **Grade Between**: 0.5% & -3.0%
- To be adjusted to existing grade

**Main Roads**

**Plan Showing Minimum Access Requirements**

Scale: Not to Scale  M.D.O. PLAN No. 2083 (Mod.)
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APPENDIX 4

EMERGENCY PANEL INFORMATION FOR VEHICLES CARRYING HAZARDOUS SUBSTANCES
Emergency Information Panel

Emergency Information Panels are required on all vehicles carrying hazardous substances. They provide essential information for emergency services personnel following an incident such as a collision between a road vehicle and a cane train. The following information is an extract from Chapter 7 of the Australian Dangerous Goods Code, Volume 1, issue no. 6 – Requirements and Recommendations and is reproduced with permission.

Emergency Information Panel
An Emergency Information Panel is a placard that is substantially of the format and design shown in Figure A1 and that includes the following particulars:

a) in space (a):
   i) the proper shipping name for the dangerous goods being transported in bulk; and
   ii) if the proper shipping name includes the expression ‘N.O.S’ – that expression must be included but the names of substances which contribute most to the hazard of the goods may be omitted; and

b) in space (b) – the UN Number for the dangerous goods; and

c) in space (c):
   i) any Hazchem Code assigned to the dangerous goods; and
   ii) if the letter ‘[S]’, ‘[T]’, ‘[Y]’ or ‘[Z]’ appears in square brackets in column 5 of the entry for the dangerous goods in Appendix 2 – that letter must be in reverse print, that is, white letter on black background; and
   iii) if the dangerous goods are environmentally hazardous substances (UN3077) and UN3082) – the expression “CONTAIN SPILLAGE”; and

d) in space (d) – the expression “IN EMERGENCY DIAL 000, POLICE or FIRE BRIGADE”, and

e) in space (e) – the class label for the dangerous goods and any subsidiary risk label or labels applicable to the dangerous goods; and

1 NOS – Not otherwise specified – Used when it is not practicable to accurately specify the goods being transported (i.e. for mixed loads).
2 UN Number
   • a substances identification serial number shown in volume 2, appendix 3 of the Dangerous Goods Code of Practice.
   • a number assigned the goods by the United Nations (UN) committee of experts for the transport of dangerous goods and published in UN recommendations.
3 Appendix 2 is located in volume 2 of the Dangerous Goods Code.
f) in space (f) – the name of an organisation responsible for providing the telephone advisory service, and a telephone number of the service, including (STD) area code.

**Figure A2** shows a typical panel for ethyl methyl ether.

For a full description of the meaning of the UN number and the letters 5 and 7 and 2 in the above description, see Volume 2 of the Dangerous Goods Code.

**Figure A3** shows a range of risk labels displayed in Panel E of **Figure A1**.

**Electronic version of the various class labels of Dangerous Goods**

Electronic version of the various class labels of Dangerous Goods, as found in the Australian Dangerous Goods Code Volume 1 (1998) pgs 114-120.

Electronic versions are only available in either word or PDF format. Word version provides a higher resolution than the pdf version.
Figure A1  Format of Emergency Information Panel
Figure A2   Completed Emergency Information Panel
Figure A3  Range of Risk Labels

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Source: DrägerAust Pty Ltd
APPENDIX 5

TRACKSIDE WARNING SIGNS
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TRACKSIDE WARNING SIGNS

The relevant dimensions for two warning signs (boards) are shown below:

For both signs:
- matt black lettering centered on yellow reflectorised background

Harvester group’s radio frequency channel

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