



# final report

Project code: B.NBP.0528  
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Date published: April 2009  
ISBN: 9781741915211

PUBLISHED BY  
Meat & Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## Fatigue Risk Management System Policy

Meat & Livestock Australia acknowledges the matching funds provided by the Australian

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## Abbreviations

AFM	Advanced Fatigue Management
CFSR	Centre for Sleep Research
FAID	Fatigue Audit InterDyne (FAID)
FDR	Fitness for Duty Rules
FDR-1	Fitness for Duty-Rule 1
FDR-2	Fitness for Duty-Rule 2
FRMS	Fatigue-risk Management System
National Model	Heavy Vehicle Driver Fatigue National Model (May 2008) Legislation
NTC	National Transport Commission
RALTS	Remote Australia Livestock Transport Scheme
UniSA	University of South Australia

# Fatigue Risk Management

## Definition of Terms

<b>Agreed authority</b>	The authority to whom participants in the RALTS accreditation Scheme agree to report.
<b>RALTS operating limits</b>	Tools that allow operators, customers, and drivers to plan, monitor and manage work and rest times to minimise the impact of fatigue, within all normal circumstances.
<b>Client</b>	The consignee of the livestock (i.e. the person to whom the livestock are to be delivered).
<b>Destination location</b>	Where livestock are finally unloaded.
<b>Lift</b>	Each job is called a Lift; it involves the transport of livestock from an origin to a destination location.
<b>Night-time sleep opportunity</b>	An opportunity for a driver to obtain at least 5 hours of sleep during a night-time period (21 to 07h).
<b>Operations</b>	The group of employees within Livestock Trucking who are responsible for the day-to-day operation of Trip Plans.
<b>Origin location</b>	Where livestock are originally loaded from.
<b>Pastoral</b>	Any large Pastoral Company, any small pastoral company, any single pastoralist, any purchaser, dealer or shipping agent of livestock.
<b>Remote Australia</b>	The land area already defined as access for triple bottoms in the states of QLD, SA, WA, and the NT.
<b>Roadboss</b>	A member of Operations who is responsible for on-going, direct communication with the Driver during Lifts
<b>Sleep opportunity</b>	The planned time in between one duty period and the next in which drivers are expected to sleep.
<b>Spelling location</b>	Location where livestock are unloaded, spelled, and reloaded.
<b>The Task</b>	Transporting livestock across Remote Australia in a commercially humane manner whilst providing a safe workplace for the driver and the highest safety standards to other road-users.
<b>Trip Plan</b>	An agreement between a transport operator and a pastoralist/client to undertake a Lift according to a detailed schedule.
<b>Livestock Trucking</b>	Any large Transport Company, any small Transport Company, any single truck operator, any station truck.

## **Preface**

The 'Remote Australia Livestock Transport Scheme' (RALTS) is a comprehensive occupational health and safety and animal welfare package. It is intended to cover all safety issues pertaining to the remote Australia livestock transport industry (hereafter called, the 'Industry'). The central theme of RALTS in general terms is raising the management standards of both the Livestock Trucking and Pastoral industries of Remote Australia and at the same time increasing the awareness of fatigue and other safety issues within the supply chain for the safety of the driver, other road users and the live stock carried. This also includes "Fitness for purpose", which includes, fitness for duty of the driver during the entire trip, fitness of the equipment for the task, fitness of the livestock for travel, and fitness of industry management to manage the entire supply chain to the standard required.

This document comprises the Fatigue-risk Management System (FRMS) policy component of RALTS. The policies and principles set out herein are concerned with managing fatigue risks in connection with livestock transport operations in the Industry. It is tended as an extension and alternative compliance model of the Advanced Fatigue Management (AFM) Standards outlined in the Heavy Vehicle Driver Fatigue National Model (May 2008) Legislation [hereafter termed the National Model] published by the National Transport Commission (NTC).

## **Background**

The Industry considers that an alternative compliance approach is considered necessary because the requirement to comply simultaneously with both animal welfare and driver fatigue legislation introduces conflicting demands. Compliance with driving regulations can result in the unethical treatment of animals. Conversely, compliance with the animal welfare regulations can result in unsafe work practices.

This complexity is compounded by the unique aspects of operating in Remote Australia, including: the remote location/workplace, the distances involved in operations, the availability of facilities for unloading and spelling livestock during the task and available amenities for the driver. Resolving this tension necessitates a more sophisticated approach to the risk management of fatigue and animal welfare.

The Industry has developed a safety case framework to support an alternate compliance model within the AFM system that they believe will provide the community, via the agreed authority, with sufficient evidence to legitimise the

## Fatigue Risk Management

application and to ensure that the net risk associated with the task is not increased. The key idea behind the Industry's case for change is predicated on:

- operational and risk environments of the remote Australia livestock transport industry are sufficiently unique that the three-tier AFM system, while suitable for the vast majority of operators, is not well-suited to this industry. In particular, it does not account for the unique impact and safety implications of the competing priorities for animal and employee health and welfare,
- geographical and social isolation in remote Australia: (a) reduces the net risk posed to Australia's road users because of the relative infrequency of traffic flow compared with urban/regional areas; (b) and has fostered a working-lifestyle culture that is not consistent with the traditional work/life distinction underlying hours-of-work rules.
- if it is possible to demonstrate directly that a driver is obtaining sufficient sleep in order to operate safely, then the number of driving hours per se may not increase risk.

In essence, the basis of the proposed safety case is to ensure that drivers consistently obtain sufficient sleep in order that they are sufficiently alert to operate a vehicle safely.

In support of the safety case, the Industry commissioned the Centre for Sleep Research (CFSR) at the University of South Australia (UniSA) to undertake a study to assess the compliance of current operating practices with the proposed RALTS. The analysis was based on 669 days of objectively assessed sleep/wake times and self-reported work/driving times collected from 32 RALT drivers (comprising ~13% of the driver population). The 767 sleep periods and 1,319 driving shifts sampled during the study were deemed to be sufficient to assess the fatigue-related safety risks arising in the industry. The study found that:

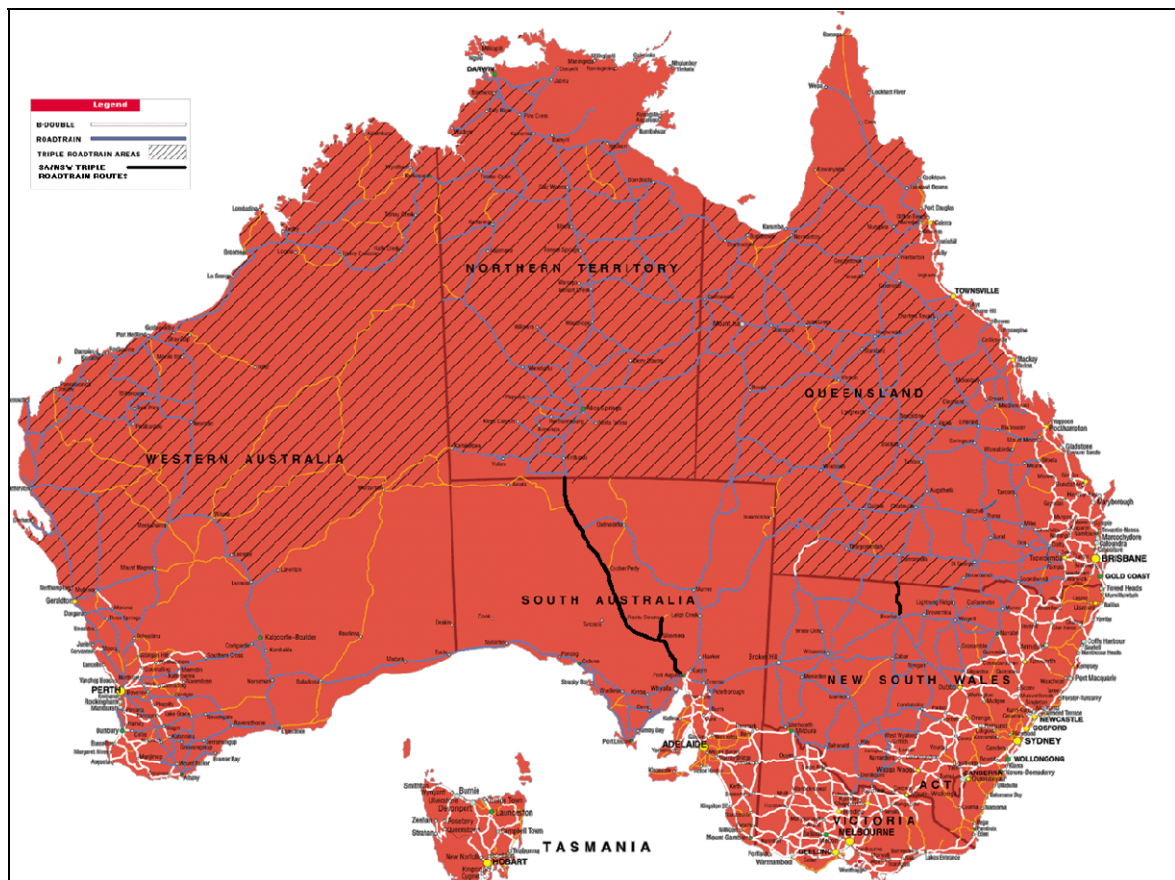
- drivers exhibited relatively normal sleep/wake cycles and obtained an average daily sleep amount of approximately 6 hours, suggesting that policies encouraging drivers to get more sleep are likely to convey the most significant safety benefits to the industry,
- the great majority (85%) of sleep was obtained in workplace settings and the quality of this sleep was moderate-to-good, suggesting that: (a) managing sleep during transport operations is critical to the safety of those operations; and (b) potential for reduced quality of sleep in truck cabins and depots is not a major safety concern, and
- approximately one-third of driving hours would be compliant with the proposed RALTS, one-third would require additional fatigue-risk countermeasures in order to be allowed, while the final one-third would not have been permitted at all, suggesting that an appropriately implemented RALTS would result in a substantially improved fatigue-risk profile for the industry.



In the report conclusion, the CFSR expressed the opinion that the Livestock Trucking and Pastoral industries operating within Remote Australia could potentially amend current operational practices in line with the general principles of the RALTS proposal. Furthermore, if the industry were able to implement these changes successfully it may be possible to operate outside of the current AFM guidelines without necessarily comprising road safety.

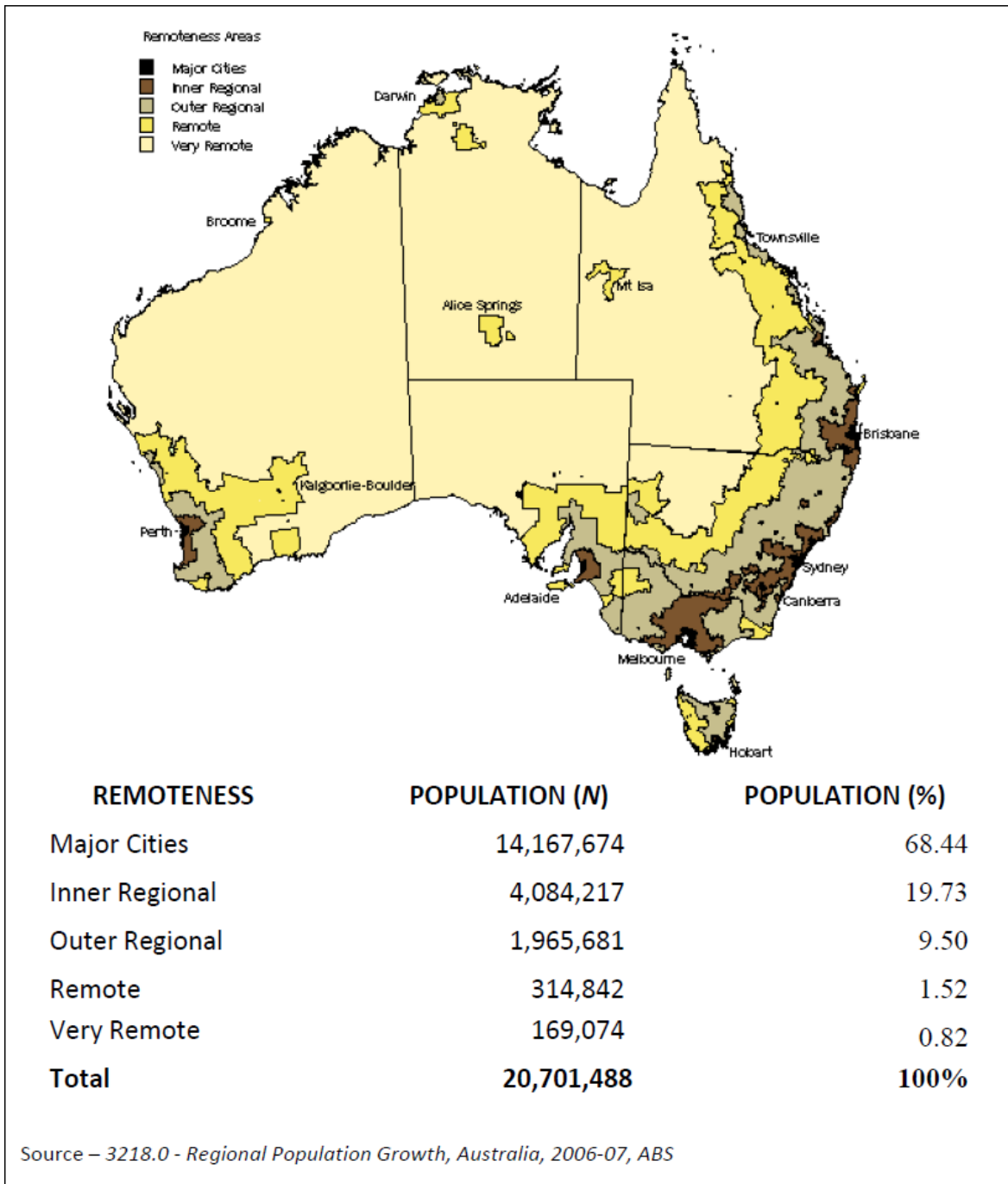
## Scope

Industry participants estimate that the population of remote Area livestock transport drivers consisted of approximately 250 individuals in 2008. These policies are primarily intended to be applied to Directors, Management, and all others directly and indirectly in the chain of responsibility for the driving task in remote Australia. The RALTS scheme will be restricted to livestock transport operations in triple bottom road train access areas of remote Australia. These areas are represented as diagonal lines on the map of Australia presented below. The RALTS policy document applies to all personnel employed, contracted, or sub-contracted to perform work that is undertaken by livestock transport operators accredited under the proposed scheme.



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The extent of distance and geographical and social isolation involved in remote Australia livestock transport operations may be discerned from the remoteness map of Australia (pg. 4). This shows Australia divided according to the geographical remoteness categories defined in the *Australian Standard Geographical Classification (ASGC), 2001* (Australian Bureau of Statistics, cat. no. 1216.0). These categories include Major City, Inner Regional, Outer Regional, Remote, and Very Remote areas. The categories represent a relative index of the remoteness of locations from goods, services and opportunities for social interaction. The number and percent of Australia's population living within these geographic areas is also reported. While the vast majority of Australia's land mass falls into either the Remote or Very Remote categories, only a combined 2.34% of the population reside in these areas.



## Responsible Parties

RALTS is based on the ‘chain of responsibility’ principles, detailing the responsibilities of all those involved within the Livestock Trucking and Pastoral industries and all relevant others. This document assigns responsibility for RALT operations across four parties: (i) the transport company/operator (ii) the pastoralist; (iii) the driver; and (iv) any agreed authorities.

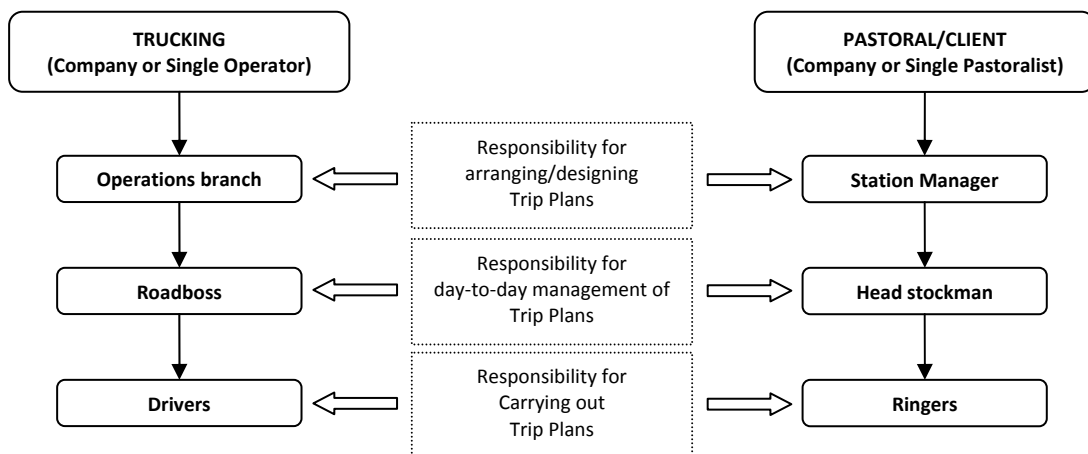
In accordance with the chain of responsibility parties outlined in the National Model, the equivalent RALTS parties include:

# Fatigue Risk Management

Parties in the Chain of Responsibility	RALTS Party	Livestock Trucking/ Operator	Pastoral/ Client	Driver
the <i>employer</i> of the driver of the vehicle	Livestock Trucking	✓		
the <i>prime contractor</i> of the driver	Livestock Trucking	✓		
the <i>operator</i> of the vehicle	Driver			✓
the <i>scheduler</i> of goods or passengers for transport by the vehicle, and the <i>scheduler</i> of its driver	Operations (which includes Roadboss and Dispatcher)	✓	✓	
the <i>consignor</i> of goods for transport by the vehicle	Pastoral or Client		✓	
the <i>consignee</i> of goods for transport by the vehicle	Pastoral or Client		✓	
the <i>loading manager</i> of goods for transport by the vehicle	Pastoral	✓	✓	✓
the <i>loader</i> of goods on to the vehicle	Pastoral and Driver	✓	✓	✓
the <i>unloader</i> of goods from the vehicle	Pastoral and Driver	✓	✓	✓

Organisational relationships are depicted below:

## PARTIES IN THE CHAIN OF RESPONSIBILITY



## Fatigue-risk Management System (FRMS)

The FRMS includes procedures that enable organisations to classify all work hours into one of four fatigue-risk bands, either: Low, Moderate, High, or Extreme. Classification is primarily, but not exclusively, carried-out via an assessment of: (1) the adequacy of sleep opportunities available in a given work schedule; and (2) the amount of sleep obtained by drivers within sleep opportunities. Individual drivers and supervisors may declare that a fatigued state exists based on an assessment of personal fatigue symptoms, irrespective of sleep opportunity or sleep obtained. Each fatigue-risk band is associated with a set of control procedures outlining the actions that supervisors and individual drivers must undertake to mitigate fatigue-risks.

Table 1 shows for each fatigue-risk band, the associated colour codes and control procedures that apply to supervisors and individual drivers respectively. [\[Participant in RALTS accreditation\]](#) agrees to implement these control procedures whenever applicable.

**Table 1**—Fatigue risk bands indicating the colour code and control procedures for the Low, Moderate, High, and Extreme fatigue-risk bands

Colour code	Response level	Control procedure
Low	Transport (includes Operations)	<ul style="list-style-type: none"> <li>No additional controls</li> </ul>
	Driver	<ul style="list-style-type: none"> <li>Self-monitor for significant personal fatigue symptoms</li> </ul>
Moderate	Transport (includes Operations)	<ul style="list-style-type: none"> <li>Ensure employee to follow a standard fatigue-risk mitigation plan</li> </ul>
	Driver	<ul style="list-style-type: none"> <li>Inform supervisor</li> <li>Undertake standard fatigue-risk mitigation plan</li> </ul>
High	Transport (includes Operations)	<ul style="list-style-type: none"> <li>Document incidence of High fatigue-risk level</li> <li>Agree to a specific fatigue-risk mitigation plan with driver</li> <li>Close supervision of employee</li> </ul>
	Driver	<ul style="list-style-type: none"> <li>Do not drive without supervisory advice</li> <li>Inform supervisor</li> <li>Agree to a specific fatigue-risk mitigation plan with supervisor</li> </ul>
Extreme	Transport (includes Operations)	<ul style="list-style-type: none"> <li>Document incidence of Very High fatigue risk level</li> <li>Driver to be rested</li> <li>Undertake a Targeted Internal Review within 1 week (see section 5)</li> </ul>
	Driver	<ul style="list-style-type: none"> <li>Inform supervisor</li> <li>Get some sleep</li> </ul>

## 1. Scheduling and Rostering (Trip Planning)

### ***Standard***

Planning and scheduling of all Lifts will incorporate a Trip Plan and all other fatigue management measures.

### ***Description***

Trip Plans are to ensure the task is planned and assigned in accordance with the RALTS operating limits. Driver scheduling and rostering practices will include an assessment of the driver's recent work history, ability, and welfare. It will also take into account the area where the trip is being performed, the length of the trip, road conditions, and the availability of rest areas. In respect to livestock, the trip plan should also specify the condition of the animals, loading densities, and the available spelling facilities (if required).

### ***Criteria***

To satisfy this standard [\[Participant in RALTS accreditation\]](#) must demonstrate the following:

- 1.1 Trip Plans are created, documented, and risk-assessed for each Lift;
- 1.2 Trip Plans and driver rosters are monitored and regularly reviewed;
- 1.3 action is taken to minimise fatigue risks when altering Trip Plans and driver rosters;
- 1.4 guidelines are in place for the use of relief/casual drivers where required;
- 1.5 the increased fatigue risk for a driver returning from leave or time off is considered in Trip Planning and driver rostering;
- 1.6 in all circumstances, the driver has the authority to amend to a Trip Plan where he/she believes the Trip Plan would entail non-compliance with the RALTS policies;
- 1.7 Trip Plans and driver rosters must not extend beyond the RALTS operating limits;
- 1.8 the planning of livestock Trip Plans are the responsibility of the Livestock Trucking and Pastoral Companies;
- 1.9 all Trip Plans must be correctly documented and suitable for auditing purposes.

## ***RALTS – Trip Plans and Driver Assignment***

### **Description of Trip Plans**

All Lifts must be planned in advance and have a Trip Plan. A Trip plan is an agreement between Trucking and Pastoral companies to transport livestock from an origin to a destination location. A Trip Plan must specify the timing, duration, and location of all intended duty periods and sleep opportunities (see Figure 2 on page 15 for example). Any and all non-driving duties performed between the start time and finish time of a trip plan must be considered as part of the trip plan. Trip Plans must include a night-time sleep opportunity on the night directly preceding the first duty period and directly after the final duty period. The following definitions apply:

<b>Duty period</b>	Any period of time that a driver is required to undertake work tasks, including both driving and non-driving duties.
<b>Driving duties</b>	Any duty that is directly involved in driving a truck, inclusive of all safety and animal welfare road side checks ,regular driving breaks and other stops (e.g. re-fuelling, food and comfort stops).
<b>Non-driving duties</b>	Any duty that a driver is required to perform as part of his/her employment, exclusive of driving duties and inclusive of loading/unloading livestock, truck repairs, general maintenance and other non-driving tasks (e.g. washing out; office work).
<b>Sleep opportunity</b>	Anytime that a driver is not engaged in performing duties.

**Note**—Events such as unplanned naps, meal times and other driving pauses, which are not ordinarily considered to be 'duty' but which also are not planned sleep opportunities, should be considered as 'duty' for the purpose of the Trip Plan fatigue assessment.

All Trip Plans, including the timing, duration, and location of all intended duty periods and sleep opportunities, must be fully documented and recorded. If unforeseen events require alteration of the original Trip Plan, Operations in consultation with the driver and pastoralist may agree to amend the original plan. The amended plan will then be considered to be the Trip Plan and subject to RALTS operating limits. All amended Trip Plans, including the timing, duration, and location of all intended duty periods and sleep opportunities, must be documented and recorded. In circumstances where amendments entail violation of RALTS operating limits, the company/operator must

document the violation and inform the agreed authority and provide circumstances/justification as to why the violation was necessary. The time-frame for reporting violations of RALTS operating limits are outlined in Section 5 – Internal Review.

### **Responsibility for Trip Plans**

The Livestock Trucking and Pastoral companies share a joint responsibility for ensuring that Trip Plans are designed in accordance with RALTS operating limits. It is envisaged that Livestock Trucking and Pastoral Companies will co-develop a set of typical Trip Plans covering typical tasks. In regard to Trip Plans and driver rostering, Livestock Trucking and Pastoral have the following responsibilities under RALTS:



# Fatigue Risk Management

Livestock Trucking is responsible for:

- (1) Ensuring and documenting (via a signed declaration) that Trip Plans are consistent with RALTS operating limits, and that Trip Plans provide drivers with adequate sleep opportunities.
- (2) Ensuring that duty requirements outside of Trip Plans are consistent with RALTS operating limits, by providing drivers with adequate sleep opportunities between Trip Plans.
- (3) Taking account of drivers' personal circumstances.
- (4) Ensuring that fuelling plans are accounted for.
- (5) Ensuring that Pastoral have provided all information required Trip Plans (see point under Pastoral below).
- (6) Instigating amendments to Trip Plans whenever the original plan is not compliant with RALTS policies/procedures.
- (7) Operations is responsible for:
  - (7.1) Producing the Trip Plan in accordance with the requirements of the particular lift and in consultation with the Roadboss, drivers, and client. Once the Lift commences, Operations will constantly liaise with the Roadboss and other drivers to ensure the Lift is running according to the Trip Plan and will advise the client of any changes. If the Trip Plan has to be modified at any point in time, Operations (in conjunction with the client) will produce a modified Trip Plan and communicate this to all concerned. If the modified Trip Plan involves a higher fatigue-risk band, then the driver/s concerned must be consulted and give their consent (subject to their not being disadvantaged if at any time they require sleep and cannot meet the modified Trip Plan).

The Roadboss is responsible for:

- (7.1.1) Acting as the direct 'link' between Operations and the Driver for all Trip Plans.
- (7.1.2) Managing the Lift at an operational level and for operating the lift to the Trip Plan. This includes managing the loading, all travel times leading up to the unloading points of either destination or spelling facilities as per the Trip Plan, and constantly liaising with the drivers to ensure compliance.

# Fatigue Risk Management

Pastoral is responsible for:

- (1) Ensuring and documenting (via a signed declaration) that Trip Plans are consistent with the RALTS operating limits, and that Trip Plans provide drivers with adequate sleep opportunities.
- (2) Not requesting or allowing livestock to be transported under anything but an agreed Trip Plan.
- (3) Providing Operations with reasonable advance notice and details of the required lift/s in order to plan and produce a Trip Plan (it is acknowledged that depending on the advance notice given, final stock numbers, and condition can be a variable).
- (4) Providing adequate loading facilities and staff. Ensuring livestock are presented in a fit state to travel, and ready for loading within the agreed stock preparation and loading times as per the Trip Plan (it is acknowledged that final stock numbers, condition and loading times can be a variable).
- (5) Providing information to Livestock Trucking about the condition of stock, estimated volumes, loading directions and spelling locations (if any of these factors vary to the extent that the Trip Plan could no longer be completed within the specified times, then the Trip Plan must be amended accordingly).

The Driver is responsible for:

- (1) Informing their supervisor of any limits on their readiness for duty, including having obtained inadequate sleep, exhibiting symptoms of fatigue, and/or any medical condition.

Operations is responsible for:

- (1) Producing the Trip Plan in accordance with the requirements of the particular lift and in consultation with the Roadboss, drivers, and client. Once the Lift commences, Operations will constantly liaise with the Roadboss and other drivers to ensure the Lift is running according to the Trip Plan and will advise the client of any changes. If the Trip Plan has to be modified at any point in time, Operations (in conjunction with the client) will produce a modified Trip Plan and communicate this to all concerned. If the modified Trip Plan involves a higher fatigue-risk band, then the driver/s concerned must be consulted and give their consent (subject to their not being disadvantaged if at any time they require sleep and cannot meet the modified Trip Plan).

## **Assessment of Fatigue Before Trip Plans and Other Duties**

Software-based models of human fatigue provide the ideal approach to assessing the adequacy of sleep opportunities provided by a Trip Plan or other duties. These models require the input of all duty times to infer sleep opportunities and subsequent levels of fatigue risk for the average driver.

## Fatigue Risk Management

[Participant in RALTS accreditation] must select a RALTS approved software-based fatigue model to determine the fatigue-risk occurring in connection with Trip Plans and other duties. The fatigue model analysis must specifically assess the fatigue-risk associated with all duties. All duties must be assigned to a fatigue-risk band (either: Low, Moderate, High or Extreme), based on a comparison of fatigue score outputs with pre-defined fatigue score thresholds (see Table 2 for example).

**Table 2**—Example thresholds for classifying ‘fatigue scores’ into the Low, Moderate, High, and Extreme fatigue-risk bands using the Fatigue Audit InterDyne (FAID) software

Colour code	Score range
Low	<80
Moderate	80-100
High	100-120
Extreme	120+

### Documentation

The transport operator and the pastoralist agree to independently document and make available to the agreed authority on request:

- (1) The name and ID of the Driver assigned to complete Trip Plans.
- (2) The registration of the trucks used to complete Trip Plans.
- (3) The estimated timing (date/time), duration (hours/minutes), and location of all intended duty periods and driver sleep opportunities for all Trip Plans. In addition, the transport operator must provide the timing (date/time), duration (hours/minutes), and location of all duties and sleep opportunities occurring outside of Trip Plans.
- (4) The outputs of fatigue model analyses and subsequent assignment of fatigue-risk bands for Trip Plans. In addition, the transport operator must provide fatigue model analyses and subsequent assignment of fatigue-risk bands for any duties occurring outside of Trip Plans.
- (5) The actual timing (date/time), duration (hours/minutes), and location of all duty periods and driver sleep opportunities for Trip Plans.
- (6) The notification given by the pastoralist to the transport operator (i.e. the time difference between the initial request and the start date/time of the subsequent Trip Plan).

## 2. Readiness for Duty (Trip Preparation)

### **Standard**

Drivers are in a fit state to safely perform required duties.

### **Description**

[Participant in RALTS accreditation] is to ensure that sufficient time off is provided for drivers to recover from or prepare for the fatigue effects of work. Drivers are to ensure that they consider the impact of activities such as recreational activities and personal life on their well being and capacity to work safely and use time off responsibly to prepare for, or recover from, the fatigue effects of work and to report fit for duty.

### **Criteria**

To satisfy this standard [Participant in RALTS accreditation] must demonstrate the following:

- 2.1 procedures for ensuring drivers are ready for duty, which address issues of driver health, use of drugs/alcohol, medical condition, well being and state of fatigue;
- 2.2 procedures for ensuring drivers are able to assess their fitness for duty prior to commencing and during work; and
- 2.3 procedures for ensuring drivers notify Operations if they are not ready for duty due to any non-work related reasons, health or medical issue both before and during work.

### **RALTS – Readiness for Duty**

Section 7 documents procedures for ensuring driver readiness with respect to driver health, use of drugs/alcohol, and medical conditions. Readiness for duty in respect to fatigue-risk is to be assessed on the basis of 'Fitness for Duty' rules (see page 16) and a 'Fatigue Symptom Checklist' (see page 4). It is assumed that a driver undertaking any work who report as 'ready for duty' will be within the specified operating limits in respect to fatigue and compliant with RALTS Standards with respect to alcohol and other drugs for the duration of the shift.

## Responsibility

In regard to readiness for duty, transport companies/operators and management, customers and individual drivers have the following responsibilities under RALTS:

Livestock Trucking is responsible for:

- (1) Developing procedures that ensure drivers are able to identify and report non-compliance with any readiness for duty rule.
- (2) Confirming that drivers are fit for duty, by requiring drivers to sign a 'Ready for Duty' statement at the start of duty periods.
- (3) Where a driver is not ready for duty implementing appropriate risk mitigation measures.
- (4) Informing a pastoralist if a violation of RALTS operating limits occurs during a Trip Plan to which that pastoralist shares a joint responsibility.
- (5) Amending Trip Plans or other driver duties when drivers are assessed as being outside of RALTS operating limits.

Pastoral is responsible for:

- (1)
  - Observing that drivers are fit for duty at loading and unloading locations, and
  - Requesting and being familiar with a copy of the Trip Plan
  - Ensuring each driver's daily "Mechanical and "Fatigue Self Assessment Records" are current, up to date and that the driver has sufficient working hours available to complete the Lift in accordance with the Trip Plan.
- (2) Refusing to load a truck when it is obvious from the Driver's records that the driver has or will be non-compliant with RALTS operating limits if allowed to continue.
- (3) Inform and discuss with Livestock Trucking (Operations) if and/or when a driver either does or has the potential to violates his Trip Plan and discuss and agree on an amended Trip Plan.

The driver is responsible for:

- (1) Using the sleep opportunities provided by the Trip Plan or other duties to obtain adequate sleep.
- (2) Undertaking and recording all assessment procedures required to establish whether they are within RALTS operating limits.
- (3) Reporting to supervisors any instance during a Trip Plan or other duties where he/she has violated RALTS operating limits.
- (4) Reporting fit for duty at all dispatch and receipt locations.

## Assessment of Fatigue During Trip Plans and Other Duties

### *Fitness for Duty Rules – Assessment of Sleep Obtained*

Readiness for duty in respect to driver fatigue will be determined on an individual basis at the commencement and for the duration of duty periods. 'Fitness for Duty' rules (FDR) will be used to assess drivers' state of readiness. There are 2 Fitness for Duty rules, labelled: (i) FDR-1; and (ii) FDR-2 respectively. Compliance with FDR-1 is evaluated on the basis on three sub-rules (see Figure 1 below), where:

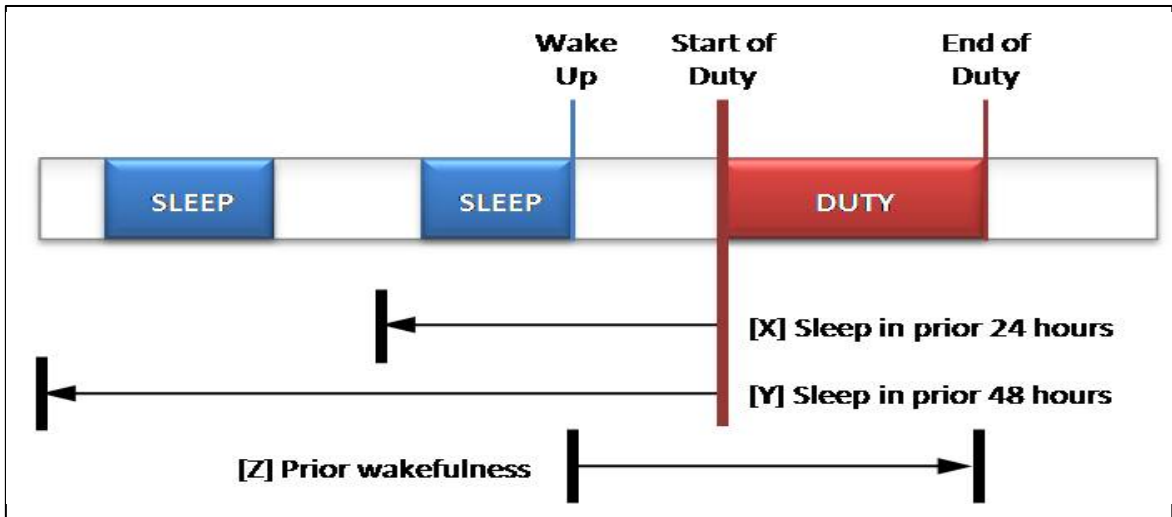
X and Y rules – Prior to commencing duty, the driver must assess whether he/she has obtained:

- 5 hours sleep in the prior 24 hours
- 12 hours sleep in the prior 48 hours

**Note**—sleep periods are not required to be taken in a continuous block (i.e. 2 x 2.5-hour sleeps is regarded as equivalent to 1 x 5.0-hour sleep).

Z rule – Prior to commencing duty, the driver must determine whether the period from wake-up to the end of the planned duty period (i.e. the time awake by the end of the planned duty period) exceeded the sleep he/she obtained in the 48 hours prior to commencing duty.

If a driver determines that either of the X, Y or Z rules has been violated, then the driver is required to undertake the FDR-2 to evaluate their level of fatigue-risk. The FDR-2 permits evaluation of drivers' personal level of fatigue-risk based on their sleep/wake history. Table 3 below indicates the three steps involved in calculating the FDR-2. Once calculated, the FDR-2 score must be compared with a set of threshold values in order to assign a fatigue-risk band to the duties being undertaken by the driver. These threshold values are shown in Table 4. An example calculation is provided on page 13.



**Figure 1**—'Fitness for Duty Rule-1', where [X] and [Y] indicate the amount of sleep obtained in the 24 and 48 hours prior to work start respectively, and [Z] the length of wakefulness from awakening to the end time of work.

**Table 3**—How to calculate the 'Fitness for Duty Rule-2'

FITNESS FOR DUTY RULE-2					
STEP 1 [X]—For sleep obtained in the prior 24 hours, add points for every hour of sleep below 5 hours as per the lookup table below					
Sleep (hrs)	≤2	2-3	3-4	4-5	5+
Points	12	8	4	2	0
STEP 2 [Y]— For sleep obtained in the prior 48 hours, add points for every hour of sleep below 12 hours as per the lookup table below					
Sleep (hrs)	≤8	8-10	10-11	11-12	12+
Points	8	6	4	2	0
STEP 3 [Z]—Hours awake since last sleep by the end of the planned duty period					
If sleep in Step 2 is greater than hours awake, points = 0.					
If less, add 1 point per hour awake greater than sleep in Step 2.					

**Table 4**—Categories of fatigue-risk for the 'Fitness for Duty Rule-2'

Fatigue-risk Band	Score range
Low	0
Moderate	1-6
High	7-12
Extreme	13+

# Fatigue Risk Management

**Example**—Driver Smith is about to start a 12-hour duty period. He/she has obtained 4 hours of sleep in the prior 24 hours, 10 hours sleep in the prior 48 hours, and has been awake for 2 hours.

Driver Smith must calculate a FDR-2 score, since at least one of the X, Y, or Z rules has been broken (in this scenario both the X and Y rules have been violated).

*X-rule* – Lookup FDR-2 points in **Step 1** of **Table 3**, then **points = 2**

*Y-rule* – Lookup FDR-2 points in **Step 2** of **Table 3**, then **points = 2**

*Z-rule* – Time awake at the end of the 12-hour duty period = 14 hours, thus **points = 14 - 11 = 3**

**Total FDR-2 Score = 2 + 2 + 3 = 7**

*In this scenario, Driver Smith prior sleep/wake history puts him in the high fatigue-risk category. This can be seen by looking up his FDR-2 Score in Table 4. For fatigue-risks in this category (i.e. High), the driver must inform his/her supervisor and agree to a specific fatigue-risk mitigation plan. The fatigue-risk mitigation plan could involve amending the original Trip Plan to provide an additional sleep opportunity, delay the timing of the Trip Plan (or portions of it), re-assigning loading/unloading duties within the Trip Plan, and modifying the driver's work load on subsequent days. Other options might include providing additional oversight (i.e. frequent radio checks, two-up driving for one or more segments) or re-assigning the Trip Plan to an alternate driver.*

## *Symptoms of fatigue*

Level 3 controls of the fatigue hazard trajectory are concerned with identifying overt symptoms of driver fatigue. Symptoms of fatigue may be apparent to an individual driver or to another person when observing that individual. Assessment of fatigue symptoms may be conducted by the driver, a supervisor, or any employee within the supply chain directly responsible for the Trip Plan. In making an assessment of fatigue symptoms, reference should be made to the Fatigue Symptom Checklist presented in Table 5. If four or more of the specified symptoms have been identified in a 15 minute period, there is sufficient evidence that a driver is fatigued and the driver should inform, or be asked to inform, their supervisor.



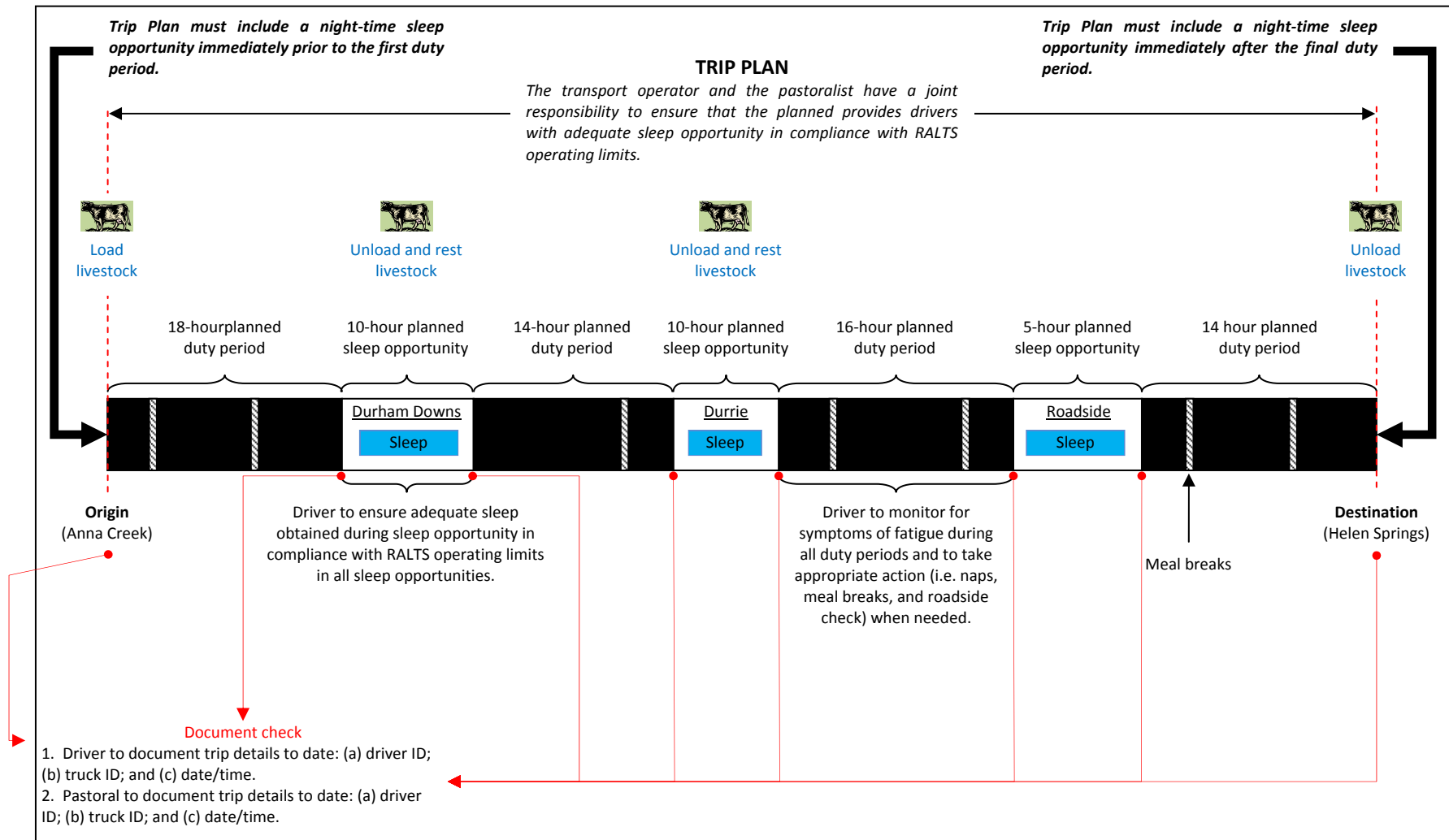
**Table 5**—Fatigue Symptom Checklist for identifying behavioural, mental and emotional symptoms of fatigue

Behavioural	Mental	Emotional
Yawning	Difficulty concentrating	More quiet or withdrawn than normal
Heavy eyelids	Lapses in attention	Lacking in energy
Eye-rubbing	Difficulty remembering what you are doing	Lacking in motivation to do the task well
Head drooping	Failure to communicate important information	Irritable or grumpy behaviour
Micro-sleeps	Failure to anticipate events or actions	
	Accidentally doing the wrong thing (error)	
	Accidentally not doing the right thing (omission)	

## Documentation

[Participant in RALTS accreditation] agrees to make available to the agreed authority on request:

- (1) The actual timing and duration of all duty periods and sleep opportunities in connection with Trip Plans and or other duties.
- (2) All Fitness for Duty calculations undertaken by the drivers in association with all Trip Plans and other duties, including driver IDs and signatures.



**Figure 2**—Pictogram of a Trip Plan showing duty periods (black bars), sleep opportunities (white bars) and livestock unloading and resting locations for a ‘hypothetical’ Trip Plan with an origin at Anna Creek and a destination at Helen Springs. The transport operator and pastoral have a joint responsibility to ensure that Trip Plans provide drivers with adequate sleep opportunities. Drivers are responsible for obtaining adequate sleep during those sleep opportunities

### 3. Fatigue Management Training

#### **Standard**

All personnel involved in the management, operation, administration, participation and verification chain of the Advanced Fatigue Management and RALTS systems must demonstrate appropriate knowledge and skills in fatigue management relevant to their position.

#### **Description**

Fatigue knowledge and awareness is essential to ensure all employees (including managers), who are involved in the fatigue management system, understand fatigue management issues and have the knowledge and skills to practise fatigue management and to comply with the operator's fatigue management system.

#### **Criteria**

To satisfy this standard Livestock Trucking must demonstrate the following:

- 3.1 that the operator has steps in place to ensure anyone involved in the management, operation, administration, participation and verification of the fatigue management system is made aware of the operator's current fatigue management policies and procedures;
- 3.2 that all persons who hold a position of responsibility under the operator's Advanced Fatigue Management and RALTS systems are identified; and
  - 3.2.1 have been inducted and regularly updated in the operator's fatigue management policies and procedures;
  - 3.2.2 are able to demonstrate competence in managing driver fatigue, including understanding the causes, effects and symptoms of fatigue, and being able to apply strategies to better manage fatigue; and
    - 3.2.2.1 if the person drives a heavy vehicle under Advanced Fatigue Management – that person is able to demonstrate competence with TLIF1007C *Apply fatigue management strategies*<sup>1</sup>;
    - 3.2.2.2 if the person in Operations as described in the heavy vehicle driver fatigue legislation, or who supervises or manages drivers and scheduling staff – that person is able to demonstrate competence with TLIF6307A *Administer the implementation of fatigue management strategies*<sup>2</sup>;
- 3.3 That they have:
  - 3.3.1 established a procedure for maintaining the currency of knowledge in fatigue management for all people who hold a position of responsibility, including identifying if, and when, any re-assessment of competence is to be conducted, and ensuring

that this has occurred;

3.3.2 ensured that any knowledge needs are identified, and that appropriate action is undertaken to address those needs;

3.4 that records of competence of drivers, roadboss, dispatchers, and others in Operations or those who supervise or manage drivers and scheduling staff have been maintained, including:

- details of what, if any, training was undertaken, who delivered the training and when this training occurred;

- if, and when any re-training is required; and

- record of the qualifications of workers, including any units of competence achieved.

### ***Explanatory Note for Assessment***

For the purposes of assessment, the evidence required to demonstrate competence must be relevant to, and satisfy all the elements and performance criteria of, the specified unit. Performance must be demonstrated consistently over a period of time and in a suitable range of contexts including through written and oral tests, appropriate simulated activities and/or in an appropriate range of situations in the workplace.

#### Notes

<sup>1</sup>TLIF1007C *Apply fatigue management strategies* – training aimed at providing drivers with the knowledge and qualifications required to address and manage fatigue in the workplace.

<sup>2</sup>TLIF6307A *Administer the implementation of fatigue management strategies* – training aimed at providing supervisors and/or dispatchers and rostering personnel with the knowledge and qualifications required to address and manage fatigue under the National Model.

## 4. Responsibilities

### ***Standard***

The authorisations, responsibilities and duties of all positions involved in the management, operation, administration, participation and verification of their operations under the RALTS option are current, clearly defined and documented and carried out accordingly.

### ***Description***

The compliant operation of the RALTS option is dependent on all relevant personnel knowing and fulfilling their responsibilities to ensure that the Advanced Fatigue Management option standards are met.

### ***Criteria***

To satisfy this standard an operator must demonstrate the following:

- 4.1 all relevant personnel are carrying out their duties and responsibilities compliant with the RALTS standards and operator's fatigue management system; and
- 4.2 authorities, responsibilities and duties relating to the Advanced Fatigue Management option are current, clearly defined and communicated to all appropriate personnel;
- 4.3 all relevant personnel are carrying out their duties and responsibilities compliant with the RALTS standards.

### ***RALTS – General Responsibilities***

RALTS is based on a 'chain of responsibility' model detailing the responsibilities of major industry and occupational groups within the industry (i.e. transport companies/operators and customers, managers/supervisors, and drivers). [\[Participant in RALTS accreditation\]](#) considers itself to be a [\[Livestock Trucking/Pastoral\]](#) within the chain of responsibility model and agrees to fulfil its responsibilities in accordance with the policies detailed herein.

Responsibility for fatigue-risk management is the responsibility of Livestock Trucking, Pastoral, and Drivers, wherein:

Livestock Trucking is responsible for:

- ensuring that drivers have sufficient sleep opportunities during Trip Plans and other duties
- ensuring that drivers document the timing and duration of all duty periods, sleep opportunities, and Fitness for Duty rule calculations for all Trip Plans and other duties
- supporting and providing the necessary work environment to allow drivers to manage their own fatigue

Pastoral is responsible for:

- providing transport operators with advanced notification of requirements for livestock transport services
- ensuring that drivers have adequate sleep opportunities during Trip Plans and whilst under Pastoral supervision
- supporting and providing the necessary work environment to allow drivers to manage their own fatigue

Drivers are responsible for:

- ensuring that adequate sleep is obtained during the sleep opportunities provided by Trip Plans and other duties
- reporting to supervisors occasions where sleep obtained or fatigue symptoms are outside of RALTS operating limits

The specific responsibilities of RALTS participants in relation to Scheduling and Rostering and Readiness for Duty are outlined in the relevant sections.

## 5. Internal Review

### ***Standard***

An internal review system is implemented to identify non-compliances and verify that the activities comply with the Advanced Fatigue Management standards and the operator's fatigue management system.

### ***Description***

The internal review process is an essential management tool that checks that procedures are being followed and indicates how the Advanced Fatigue Management option is working. Fundamental to the management of the fatigue risk is the capacity of the Advanced Fatigue Management option system to assess fatigue risk and to identify, report and investigate incidents of non-compliance with the Advanced Fatigue Management standards and take the necessary corrective action.

### ***Criteria***

To satisfy this standard an operator must demonstrate the following:

- 5.1 procedures are in place to define how an internal review program of the Advanced Fatigue Management standards is produced, conducted, reported and recorded at least every 12 months and corrective action taken where required;
- 5.2 internal reviews are undertaken by competent persons not responsible for the activity being reviewed;
- 5.3 procedures are in place to monitor, identify, report, investigate and record non-compliances and take the necessary corrective action to prevent further occurrences;
- 5.4 procedures are in place to investigate incidents to determine whether fatigue was a contributing factor; and
- 5.5 records of drivers' work and rest times are available and regularly reviewed to ensure compliance with operating limits.

### ***RALTS – Review of System Performance***

#### **General review**

[Participant in RALTS accreditation] is required to conduct and document a general review of transport operations every 6 months. The review must produce a report for the agreed authority that details:

- (1) A summary of Trip Plans and other duties undertaken by Livestock Trucking across the previous 12 months.
- (2) An analysis of compliance, violations and corrective actions taken in relation to:
  - all operations generally,
  - all Trip Plans (estimated and actual),
  - individual drivers.
- (3) A plan to undertake corrective action where violations of RALTS operating limits are found (especially where these are systematic).

### **Targeted Review**

For duty periods that are classified in the Extreme fatigue-risk band (see Table 1 in Fatigue Risk Bands), Livestock Trucking/Pastoral and the relevant driver must conduct a targeted review. The review must produce and deliver a report within 2 weeks of the occurrence to the agreed authority that details:

- (1) The Trip Plan and actual location, timing and parties (including Livestock Trucking/Pastoral and driver) involved in the violation.
- (2) An explanation for the violation that includes specifying the relevant events surrounding and leading up to the violation.
- (3) The Trip Plans, other duties, and time off periods undertaken by the relevant driver in the week prior to the violation.



## 6. Records and Documentation

### ***Standard***

The operator will implement, authorise, maintain and review documented policies and procedures that ensure the effective management, performance and verification of the Advanced Fatigue Management option in accordance with the standards. Records that demonstrate the compliant operation of the Advanced Fatigue Management option are collected, stored and maintained to verify compliance and be available for auditing.

### ***Description***

Policies, procedures and instructions are to be authorised, current and clearly identify and describe Advanced Fatigue Management option management, operation, administration, participation and verification activities.

### ***Criteria***

To satisfy this standard an operator must demonstrate the following:

- 6.1 policies, procedures and instructions covering all activities required to meet the Advanced Fatigue Management option standards are authorised, current, clearly defined and available to all relevant personnel;
- 6.2 all Advanced Fatigue Management option records are legible, stored, maintained and available for management and audit purposes for at least three years;
- 6.3 records of participating drivers are kept current;
- 6.4 documents are approved, issued, reviewed, modified and accounted for in accordance with the operator's prescribed control procedures; and
- 6.5 records must include individual duty hours records for all nominated drivers (e.g. pay-slips, work diaries, rosters, schedules).

### ***RALTS – General Documentation***

The specific responsibilities of RALTS participants in relation to Documentation are outlined in the relevant sections. At the general level, the requirement for documentation is divided between transport companies/operators, customers, and drivers, wherein:

Livestock Trucking must document:

- the estimated and actual timing of all duty periods and sleep opportunities for all Trip Plans and other duties (including the name and ID of the employee(s) assigned and truck registration numbers)
- Daily Mechanical and Fatigue Self Assessment records

Pastoral must document:

- the timing of all arrivals and departures at loading and delivery points, for all Trip Plans, (including the name and ID of drivers and truck registration numbers)

Drivers must document:

- the timing and duration of all duty periods, sleep opportunities, and Fitness for Duty rule calculations for all Trip Plans and other duties, and
- occasions where sleep obtained or fatigue symptoms are outside of RALTS operating limits

## 7. Health

### ***Standard***

Drivers are to participate in a health management system to identify and manage fatigue risks.

### ***Description***

A health management system is to be implemented that addresses, as a minimum, sleep disorders, medical history, substance abuse and diet, and provides preventative and remedial measures to assist drivers in the management of their health.

## **Criteria**

To satisfy this standard Livestock Trucking must demonstrate the following:

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- 7.1 drivers are certified as being fit to drive a heavy vehicle by a medical practitioner according to the Assessing Fitness to Drive by AustRoads (or equivalent document approved by the Australian Transport Council). The examination must include an assessment to detect drivers in the high risk group for sleep disorders. Examinations are to be conducted, as a minimum, once every three years for drivers aged 49 or under, and yearly for drivers aged 50 or over;
- 7.2 any medical advice for drivers is taken into account when assigning duties;
- 7.3 drivers are provided information to promote and encourage better management of their health; and
- 7.4 the transport company/operator must have a drug and alcohol policy.

## ***RALTS – Health***

Drivers participating in RALTS must be certified as being fit for duty by a medical practitioner in accordance with the AFM standard. The medical assessment must include an assessment for sleep disorders and a test to screen for the presence of drugs that could affect drivers' capacity to operate a heavy vehicle safely. The transport company/operator must also ensure that a random drug-testing regime is established to screen each driver for alcohol and other drugs on entry into the industry and at least every 3 months thereafter.

## 8. Workplace Conditions

### ***Standard***

Correct and proper workplace environments and conditions to assist in the prevention of fatigue.

### ***Description***

Suitable sleeping accommodation and other driver recreational facilities assist greatly in the prevention of fatigue.

### ***Criteria***

To satisfy this standard an operator must demonstrate the following:

- 8.1 Truck sleeper berths and depot sleeping facilities meet the agreed RALTS standard, and are optimised for quality driver rest; and
- 8.2 Truck cabins are optimised for the maximum driver comfort while driving.

## 9. Management Practices

### ***Standard***

Management practices of RALTs are to support the driver to manage his own fatigue and to minimise the risks relating to driver fatigue for any livestock carrier operating within remote Australia.

### ***Description***

Management practices are to be implemented including matching drivers to the task and support effective communication between Livestock Trucking/Pastoral and drivers on matters that affect the safe operation of the Task.

### ***Criteria***

To satisfy this standard Livestock Trucking must demonstrate the following:

- 9.1 personnel performance management practices, including counselling and disciplinary action, are in place to deter non-compliance and implement corrective actions; and
- 9.2 a communication process (e.g. in-trip communication with drivers, Operations, and Pastoral, is in place to facilitate the exchange of information.

## 10. Operating Limits

### ***Standard***

Operating limits will provide drivers and operators with the flexibility to effectively manage fatigue. Operating limits will take into account and provide for:

- the time required to perform the transport task safely under all reasonably foreseeable circumstances;
- the rest periods required to recover from the fatigue effects of work;
- the cumulative effects of fatigue over several days of work; and
- the effects of time of day on fatigue risks and quality of sleep.

### ***Description***

RALTS operating limits are tools that allow Livestock Trucking and drivers to plan, monitor and manage work and rest times to minimise the impact of fatigue, within all normal circumstances. Work and rest times are planned around RALTS operating limits. Trip plans may incorporate duties in the moderate and high fatigue-risk bands as specified by the frequency in the RALTS operating limits for the operator.

### ***Criteria***

To satisfy this standard an operator must demonstrate the following:

- 10.1 RALTS operating limits are monitored and reviewed at least every 6 months to ensure they are still relevant;
- 10.2 drivers are provided with flexibility to alter trip schedules within RALTS operating limits to maximise rest opportunities and minimise fatigue risk;
- 10.3 the occasions when a driver is permitted to operate in the moderate and high fatigue-risk bands of the RALTS operating limits are managed with appropriate counter measures; and
- 10.4 records of drivers' work and rest times are regularly reviewed to ensure compliance with RALTS operating limits.
- 10.5 records of drivers Fitness for Duty assessments are regularly reviewed to ensure compliance with RALTS operating limits (a driver should not face disciplinary action for self assessing his fatigue and taking appropriate steps, providing he/she notifies Operations accordingly).

## ***RALTS Operating Limits***

Procedures for determining, assessing, and calculating average levels of fatigue in relation to sleep opportunities for Trip Plans and other planned duties are outlined in the Scheduling and Rostering section. RALTS operating limits for Trip Plans and other planned duties are expressed in terms of the percent of duty hours that are permitted in each fatigue-risk band. Table 6 presents the RALTS operating limits for the fatigue scores associated with Trip Plans and other planned duties. Trip Plans and other duties must not be outside of RALTS operating limits. Where violations occur during the conduct of Trip Plans and other duties, the transport operator must provide an explanation/justification to the agreed authority. The time-frame for reporting violations of RALTS operating limits are outlined in Section 5 – Internal Review.

**Table 6**—‘Fatigue Score’ operating limits for Trip Plans and other planned duties (*example only*)

Fatigue-risk Band	Fatigue Score	RALTS Operating Limits <i>Percent of Duty Hours Permitted in each Fatigue-risk Band</i>
Low	0-80	60%
Moderate	80-100	35%
High	100-120	5%
Extreme	120+	0%

Procedures for determining, assessing, and calculating levels of fatigue in relation to the sleep obtained by individual drivers during Trip Plans and other duties are outlined in the Readiness for Duty section. RALTS operating limits for the Trip Plans and other duties in relation to Fitness for Duty are expressed in terms of the percent of duty hours that permitted in each fatigue-risk band. Table 7 presents the RALTS operating limits for the FDR-2 scores associated with Trip Plans and other duties (*example only*). Where violations occur during the conduct of Trip Plans and other duties, the transport operator must provide an explanation/justification to the agreed authority. The time-frame for reporting violations of RALTS operating limits are outlined in Section 5 – Internal Review.

**Table 7**—Approved ‘Fitness for Duty Rule-2’ operating limits for Trip Plans and other duties (**example only**)

Fatigue-risk Band	Fitness for Duty Rule-2	RALTS Operating Limits <i>Percent of Duty Hours Permitted in each Fatigue-risk Band</i>
Low	0	70%
Moderate	1-6	25%
High	7-12	5%
Extreme	13+	0%