WorkSafe Victoria  
Safety Development Fund

Prevention of injuries that result from working with horses in the Victorian thoroughbred horse racing industry

Phase 1 Report
15th March 2006

Prepared by:
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On behalf of:
Racing Victoria Limited  
Australian Workers Union  
Australian Trainers Association  
Victorian Jockeys Association
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The authors wish to thank the many people in the thoroughbred horse racing industry who very often at peak times in their calendar willingly and freely gave their time to share their knowledge and experience of the industry; offered their facilities and activities for observation; and travelled at their own expense to meet with the investigators.

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Executive Summary

The WorkSafe Victoria Safety Development Fund supported an exploratory project focussing on the causation of injuries that result from working with horses in the Victorian thoroughbred horse racing industry. Between July 2005 and March 2006 exploratory research work was undertaken by VIOSH Australia at the University of Ballarat on behalf of the project partners; the Australian Trainers Association (ATA); the Australian Workers Union (AWU); Racing Victoria Limited (RVL) and the Victorian Jockeys Association (VJA).

During the Phase 1 project, information about the size and nature of the injury problem in the sector was gathered through a review of injury data; a review of the formal literature; the conduct of focus groups and an industry workshop. In addition information about solutions to known problems was sought and time was spent at racing and training facilities collecting information that would supplement that collected through formal channels. This exploratory work, known as “Phase 1”, has provided a basis for the writing of an application for funding to continue the work through subsequent intervention phases.

The size of the OHS problem within the thoroughbred horse racing industry was difficult to determine. There is widespread under-reporting of incidents and injuries and records of injuries are, to a large extent, limited to those that are more severe and have led to workers’ compensation claims. The majority of reported injuries are associated with horses and the majority of those are falls from horses. While there is rightly a focus on falls experienced by jockeys during races, approximately one third of injuries reported by jockeys were sustained during track riding and a large number of injuries are sustained by track riders during training activities.

There is very limited written information about risk and risk control in the industry. The outcomes of investigations suggest that there is a wide range of OHS management; work environment; equipment; rules and procedures; and training and education related issues that increase the risk of injury.

It is recommended that the subsequent phases of the current Safety Development Fund project incorporate activities that stimulate and facilitate the prioritisation and execution of strategies that address these broad ranging issues.
# TABLE of CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>PROJECT METHODOLOGY</td>
<td>4</td>
</tr>
<tr>
<td>2.1</td>
<td>INJURY DATA</td>
<td>4</td>
</tr>
<tr>
<td>2.2</td>
<td>FOCUS GROUPS</td>
<td>4</td>
</tr>
<tr>
<td>2.3</td>
<td>WORKSHOP</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>FINDINGS</td>
<td>8</td>
</tr>
<tr>
<td>3.1</td>
<td>THE SIZE OF THE PROBLEM</td>
<td>8</td>
</tr>
<tr>
<td>3.2</td>
<td>ORGANISATIONAL AND WORK ENVIRONMENT ISSUES</td>
<td>13</td>
</tr>
<tr>
<td>3.2.1</td>
<td>OHS MANAGEMENT</td>
<td>13</td>
</tr>
<tr>
<td>3.2.2</td>
<td>WORK ENVIRONMENT</td>
<td>15</td>
</tr>
<tr>
<td>3.2.3</td>
<td>EQUIPMENT</td>
<td>24</td>
</tr>
<tr>
<td>3.2.4</td>
<td>RULES AND PROCEDURES</td>
<td>24</td>
</tr>
<tr>
<td>3.2.5</td>
<td>TRAINING AND EDUCATION</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>DISCUSSION</td>
<td>26</td>
</tr>
<tr>
<td>4.1</td>
<td>ORGANISATIONAL AND WORK ENVIRONMENT ISSUES</td>
<td>26</td>
</tr>
<tr>
<td>4.1.1</td>
<td>OHS MANAGEMENT</td>
<td>26</td>
</tr>
<tr>
<td>4.1.2</td>
<td>WORK ENVIRONMENT &amp; EQUIPMENT</td>
<td>27</td>
</tr>
<tr>
<td>4.1.3</td>
<td>EDUCATION &amp; TRAINING</td>
<td>28</td>
</tr>
<tr>
<td>4.1.4</td>
<td>RULES &amp; PROCEDURES</td>
<td>29</td>
</tr>
<tr>
<td>5</td>
<td>CONCLUSION</td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td>RECOMMENDATIONS</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 1 HAZARD MANAGEMENT</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 2 INCIDENT REPORTING</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 3 CONSULTATION</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 4 HAZARD CONTROL</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 5 DESIGN ADVICE &amp; GUIDES</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 6 TRACK EQUIPMENT</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 7 RIDING GEAR</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 8 EDUCATION, TRAINING AND MENTORING</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 9 INDUCTION AT TRACKS</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 10 BREAKING IN AND HORSE EDUCATION STANDARDS</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 11 PERSONAL HEALTH</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>RECOMMENDATION 12 INDUSTRY OH&amp;S IMPROVEMENT ACTION PLAN</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>APPENDIX 1</td>
<td>35</td>
</tr>
</tbody>
</table>
1 Introduction

During 2003 and 2004 an application for funding from the WorkSafe Victoria Safety Development Fund was developed. The application sought support for a project focussing on prevention of injuries that result from working with horses in the Victorian thoroughbred horse racing industry. While preparing the application the applicants identified that there was little documented information about the true extent of the injury problem and the work organisation and environment factors that influence the risk of injury in the industry. Thus it was proposed that the project include a preliminary phase during which exploratory research would be undertaken and the results of this would be used to inform the direction of a subsequent phase during which intervention work would be completed. WorkSafe Victoria responded to the application with the advice that the first, exploratory research phase would be funded and the results of this reviewed before the subsequent intervention phase was funded.

The phase 1 exploratory research work was undertaken by VIOSH Australia at the University of Ballarat on behalf of the project partners; the Australian Trainers Association (ATA); the Australian Workers Union (AWU); Racing Victoria Limited (RVL) and the Victorian Jockeys Association (VJA). Representatives of these respective partner organisations comprised a project steering committee that offered guidance and assistance during phase 1.

This report details the results of the exploratory research phase and provides the evidence base for a proposal for the continuation of the project through an intervention phase. The intervention proposal is contained in a separate document.

The Phase 1 work was completed between July 2005 and February 2006.
2 Project Methodology

During the Phase 1 project, information about the size and nature of the injury problem in the sector was gathered through a review of injury data; a review of the formal literature; the conduct of focus groups and an industry workshop. In addition information about solutions to known problems was sought and time was spent at racing and training facilities collecting information that would supplement that collected through formal channels.

The aim of these activities was to identify the low frequency, high severity risks, the priority higher frequency lower severity risks and to explore what is known about the solutions that exist in regard to these risks.

Research Ethics approval for the data gathering techniques was granted on 16th September 2005 by the University of Ballarat Human Research Ethics Committee (HREC).

2.1 Injury data

Attempts were made to review injury data from a range of sources including Australian and overseas racing bodies and state-based workers compensation bodies. However, owing to limitations on data availability, the analysis focussed on Victorian WorkCover Authority workers compensation claims information, Racing Victoria Limited claims information and the Victorian Admitted Episodes Data Set. Data from these sources were analysed for the purposes of a) assessing the usefulness of these in guiding prevention activity and b) to establish priorities for prevention. Claims recorded during the period July 2001 to June 2005 against the industry code “Horse Racing” (WIC Code L9145C) were reviewed.

2.2 Focus Groups

Five focus groups were designed using a focus group methodology described by Krueger and Casey (2000). A question route was developed in accord with this methodology and is attached as appendix 1. The five groups were:

1. RVL Licensed Trainers
2. RVL Licensed Jockeys
3. RVL Registered Stable Employees
4. Contractors and RVL employees in contact or who work with horses:
5. RVL Employees in contact with or who work with horses:

Participants were recruited from a pool of names formed through direct consultation with Racing Victoria Limited (RVL), Australian Trainers Association (ATA), Victorian Jockeys Association (VJA) and the Australian Workers Union (AWU).

Recruits were contacted by telephone and invited to participate after the project and the focus group methodology was explained to them. Consenting participants were sent a plain language statement and a consent form as well as documentation detailing
the process. Signed informed consent forms were collected from all participants prior to commencement of each focus group.

Participants were males and females over the age of eighteen years drawn from a range of occupational groups from within the thoroughbred horse racing industry in metropolitan and country areas. Recruitment of participants attempted to create a mix of persons in each focus group as follows:

1. RVL Licensed Trainers
   - Trainer who has presented horses for picnic races
   - Jump trainer
   - Female and male trainer representatives
   - Both metropolitan and country trainers
   - Trainer / representative from the Australian Trainers’ Association

2. RVL Licensed Jockeys
   - Apprentice jockey
   - Jump jockey
   - Picnic jockey
   - Victorian Jockey Association representative – jockey
   - Both female and male jockey representatives
   - Metropolitan and country jockeys

3. RVL Registered Stable Employees
   - Assistant Trainer
   - Foreperson
   - Track rider
   - Stable employees
   - Both female and male stable employee

4. Contractors and RVL employees in contact or who work with horses:
   - Veterinary surgeon
   - Barrier Attendant
   - TROA representative
   - Float driver
   - Farrier
   - Clerk of the course
   - Dentist

5. RVL Employees in contact with or who work with horses:
   - Stipendiary Stewards
   - Chief Veterinary surgeon
   - Veterinary surgeon
   - Farrier Supervisor
   - Barrier Attendant Supervisor

All meetings were held at Racing Victoria Limited in the education and training centre meeting rooms for two hours duration as shown in Table 1.
Table 1 Focus group meeting schedule

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Occupation Group</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>30th September 2005</td>
<td>RVL licensed racehorse trainers</td>
<td>7</td>
</tr>
<tr>
<td>4th October 2005</td>
<td>RVL employees</td>
<td>6</td>
</tr>
<tr>
<td>11th October 2005</td>
<td>RVL registered stables employees</td>
<td>8</td>
</tr>
<tr>
<td>13th October 2005</td>
<td>Contractors and RVL employees</td>
<td>7</td>
</tr>
<tr>
<td>17th October 2005</td>
<td>RVL licensed jockeys</td>
<td>5</td>
</tr>
</tbody>
</table>

All participants were invited to contribute to a discussion around the structured question route. One researcher led each focus group while two other researchers independently wrote notes regarding the dialogue. After the focus groups the three researchers collated the notes taken during each meeting and analysed them against a systems model of accident causation (Borys, 2000). This model enabled the categorisation of issues raised against one of five headings: 1. OHS management; 2. work environment; 3. equipment; 4. rules and procedures; and 5. training and education. The outcomes of the focus groups are reported against these headings below.

2.3 Workshop

A Racing Industry OHS Workshop was held on 12th December 2005, at Victoria Racing Club, Flemington. The Workshop aimed to engage industry representatives in broad ranging discussions which reviewed, confirmed and extended outcomes from focus group meetings.

Attendance was encouraged through an open invitation distributed through industry communication channels. Promotional information targeted industry representatives in key roles within the thoroughbred horse racing industry in Victoria as identified by the occupation categories included in the focus groups.

The workshops were also advertised in racing industry newsletters, via notice boards at training facilities and race tracks and via member communiqués from RVL, ATA, VJA and AWU. Radio Sport 927, Sky Channel, TVN, Sportsman and The Weekly Times provided media advertising for the workshop.

At the workshop a plenary session was held during which attendees were provided with information about the project and an overview of the research findings to date. Following this session participants were invited to attend one of 4 breakout groups according to the structure shown in Table 2.
Table 2 Workshop breakout group structure

<table>
<thead>
<tr>
<th>Breakout Groups</th>
<th>Attendee Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trainers</td>
<td>Licensed trainers, assistant trainers</td>
</tr>
<tr>
<td>2. Jockeys</td>
<td>Track riders (that ride track work only), track work supervisors, barrier attendants, track maintenance, clerk of course, track and race day employees (horse related)</td>
</tr>
<tr>
<td>3. Stable employees</td>
<td>Stable foreperson, strapper and stable hand) and contractors (vets, farriers, dentists, float drivers, breakers &amp; pre-trainers, etc.)</td>
</tr>
<tr>
<td>4. Industry representatives &amp; officials</td>
<td>Club officials, RVL employees</td>
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</table>

Attendees in each group were guided through a series of questions based on the question route employed during the focus group meetings. Discussions were conducted over a one hour period. Notes were made on butcher’s paper and then summarised by the facilitators in a power point presentation. The break-out group summaries were presented to the attendees during a subsequent plenary session in which all participants were asked to contribute additional ideas and comments. This discussion confirmed and broadened the overall findings.
3 Findings

3.1 The size of the problem

Many of the injuries reported by workers in the sector were serious and involved head and spinal injury and fractures of bones. Anecdotal evidence from workers suggests that there is widespread under-reporting of less severe injuries and incidents during which injury was narrowly avoided (near-misses). A large number of these less-severe injuries were suffered as result of incidents that had the potential to be more serious.

Victorian WorkCover Authority claims are recorded if the claim exceeds thresholds in terms of claims for time off work and claims for reimbursement of medical expenses. The Phase 1 work found that among people working with horses, there is a sense of inevitability about injuries as well as a fear of reporting, which leads to under-reporting. This is a widely recognised problem within the industry and the costs of injuries sustained by trainers’ employees are sometimes borne by the trainer to protect premiums. The transient nature of the workforce and unclear lines of responsibility also impact on data collection.

The RVL data set is limited to injuries suffered by jockeys, apprentice jockeys, barrier attendants and other RVL employees and is in theory based on the workers’ compensation claims information. However, within the data set are a number of records that appear unlikely to have been recorded as workers compensation claims. Therefore, it cannot be assumed that all injuries recorded within the RVL data set appear within the WorkCover claims data set. Being based on claims, the RVL data set suffers from some of the same limitations as WorkCover data.

The Victorian Admissions Emergency Data does not withstand interrogation for the purposes of identifying clusters of injury types, priorities or trends in this sector, owing to it containing insufficient information, containing information that in all probability relates to non-racing horse-related activities and there being inconsistencies in the quality and amount of data recorded with each admission.

In the period July 2001 to June 2005 1,000 claims were recorded within the VWA data set against the industry “Horse Racing” (WIC Code L9145C). These claims had a fully developed cost (FDC) of $25m. Of these 1,000 claims, 771 (77%) claims were made in regard to injuries incurred during horse-related activity, i.e. a horse was directly involved. These 771 horse-related claims were categorised as either:

(i) falls (i.e. a rider fall where the horse fell; or horse fell taking rider with it, then rider got struck by or landed on by a horse (either their own or another); or rider fell from horse then was struck or landed on by a horse (but their own horse did not fall) or rider fell from horse into a built object);
(ii) horse-related musculoskeletal disorder (i.e. injured while handling the horse by his/her own manual handling activities or by horses action such as sudden movement); and

(iii) struck (i.e. worker was struck, kicked, pushed, bitten or stood on by a horse; or pushed by the horse into something (being trapped between); horse fell on someone who was not riding the horse; or the person was riding a horse when struck).

Other injuries where a horse was involved, such as a rider being injured by a horse running through or into something (but not knocking the rider off) were aggregated.

VWA data collected during the 4 years July 2001 to June 2005 records falls accounting for 429 (43%) claims and 58% of FDC. RVL data collected during the 3 years and 3 months between May 2002 – August 2005 records 197 claims associated with falls. Assuming a consistent rate of falls in any period, the RVL claims figure may be adjusted to match the VWA claims period; i.e. RVL records an average of 5 claims for falls per month and therefore it may be assumed that in a four year period the total number of falls would be approximately 242. This suggests that 187 (429-242) or 43% of the falls recorded within the WorkCover data set were experienced by track riders i.e. not licensed jockeys or apprentice jockeys. It is a certainty that some of the licensed jockeys’ falls will have occurred during track work meaning that something less than 197 (46%) falls recorded during the claims data period were during race events.

The RVL and WorkCover data sets were both reviewed to identify the number of falls that occurred during racing and non-racing activities. Unfortunately, neither data set adequately records the circumstances under which many injuries were sustained. Within the WorkCover data set it was only possible to determine whether an injury was sustained during a race meeting or non-race work in 6% of cases. These shortcomings limit further interpretation.

Within the RVL data set are 292 claims of which 197 (67%) were for injuries sustained as a result of falls. Of the 197 falls, 132 (67%) record falls injuries to jockeys on race day. Of these, 91 (69%) were during a flat race, 30 (23%) were during a jumps race, 9 (7%) were falls on the way to the barriers or after the winning post and the remaining 2 were in the mounting yard.

RVL data records falls experienced by jockeys during track work accounting for 65 (22%) injuries and 33% of all falls. 52 (81%) track work falls were while riding on the flat and 11 (17%) were while jumping hurdles.

A reasonable working deduction based on these figures is that:

- 67% of falls injuries recorded in the RVL data set are suffered by jockeys at race events;
- 33% of falls injuries recorded in the RVL data set are to licensed jockeys at track work;
- 43% of falls injuries recorded in the VWA data set are to track work riders (excluding licensed jockeys) at track work.
Based on these analyses, it is apparent that a reasonably large proportion of falls injuries are to track riders and licensed jockeys at track work. In comparing race day and training injury frequencies it is important to note that the analysis does not take account of severity of injury.

Within the VWA data set, striking accounted for 232 (23.2%) injuries and 14% of the FDC and horse-related musculoskeletal disorders accounted for 54 (5.4%) of claims and 9.1% of the FDC within the WorkCover data set. It was not possible to determine the occupation or whether the injuries occurred during race or non-race activities.

VWA data shows that horse-related non-fall injuries therefore account for 34.2% of workers compensation claims and 28.5% of FDC.

Non-falls, race day injuries accounted for 41 (14%) injuries within the RVL data set. The large majority of these were striking injuries. Non-falls track work injuries accounted for 35 (12%) of non race day injuries to jockeys. Within the RVL data set, barrier attendants were specifically identified in 18 (6%) claims records and stewards and starters in 2 records.

Within the VWA claims data set were 229 (22.9%) injuries that were non-horse related and these accounted for 17.2% of the FDC. These claims were categorised as (i) buildings or grounds related; (ii) musculoskeletal disorder not related to a horse; (iii) plant or machinery related; (iv) vehicle related; or (v) emotional/psychological.

Buildings or grounds related claims accounted for 57 (5.7%) and 2.2% of the FDC, while musculoskeletal disorder accounted for 51 (5.1%) of claims and 5.7% of the FDC. Plant or machinery related injuries accounted for 35 (3.5%) of claims and 1.7% of the FDC and vehicle related injuries accounted for 23 (2.3%) claims and 1.4% of FDC. Emotional/psychological conditions accounted for 15 (1.5%) of claims and 0.5% of the FDC.

The findings of the analysis of the claims data are summarised in Figure 1 to Figure 6.

![Figure 1 Proportions of horse and non-horse related injuries within the Victorian WorkCover Claims Data set July 2001 - June 2005](image-url)
Figure 2 Numbers and proportions of horse and non-horse related injuries within the RVL Claims Data set July 2001 - June 2005

Figure 3 Numbers and proportions of horse related injuries within the WorkCover Claims Data set July 2001 - June 2005

Figure 4 Numbers and proportions of race day and track riding falls related injuries within the RVL Claims Data set July 2001 - June 2005
Falls experienced by jockeys at race events 13%
Falls during track work (includes track riders & some jockeys 54%
Falls experienced by jockeys during track work 33%

Figure 5 Proportions of race day and track riding falls related injuries based on an analysis of the RVL and WorkSafe Victoria Claims Data sets

Figure 6 Numbers, types and proportions of non-horse related injuries within the WorkCover Claims Data set July 2001 - June 2005

Press et al (1995) analysed 1,700 horse racing related injuries reported in the USA during 1990 and found that 64% were fractures caused by becoming unseated and subsequently falling. Waller et al (2000) analysed data in the USA from 1993-1996 and identified 6,545 injuries, of which 19% were to the head or neck as a result of being thrown or struck by a horse. Within the WorkCover claims data 48% (n=482) of injuries were fractures and contusions and 3% (n=31) were related to head injury and concussion.
Turner et al (2002) reported that 30% of injuries in the UK & Ireland occur in the paddock and stalls, before and after races and injuries also frequently occur during track work and travel to the racecourse for training. The authors also report that the percentage of rides resulting in falls (1992-2000) is 0.41% or 636 falls in flat racing and 6.1% or 3,561 falls in jumps racing.

There have been several fatalities within the industry; between January 2001 and December 2005 there were four fatalities among jockeys recorded by WorkSafe Victoria and there are a number of references in the literature to the potential. Many authors emphasise that the falls that occur during racing are from a height of 3m measured to the jockey’s head or from 2m measured to the saddle at speeds of up to 60km/hr (Turner et al 2002).

A search of the Victorian State Coroner’s database (NCIS) for the years 2001 – 2005 reveals the death of an apprentice jockey at Benalla during 2001; the death of a trainer in 2002 as a result of being crushed by a horse during unloading at a float park; and the death of a strapper in 2002 as a result of a fall during track work. Of note is the recent death of a horse breaker that has been recorded during 2006.

Notwithstanding the data discussed above, the low quality of the injury data renders it of limited use in the identification of specific causes of injuries and establishment of priorities for intervention other than to say that falls (43% of claims injuries) and horse handling injuries (34% of claims injuries) among jockeys, track riders and stable employees should be a focus.

3.2 Organisational and work environment issues

The Phase 1 work found that the workers in the sector are exposed to significant risk of injury as a result of shortcomings in the industry in regard to OHS management; work environment; equipment; rules and procedures; and training and education.

3.2.1 OHS Management

The culture within the sector appears to lead to a greater focus on horses and their performance than on the health and safety and well-being of employees. Public safety is also allocated a higher priority than worker safety and is sometimes addressed at the expense of worker safety. Where there is attention paid to worker safety, the emphasis is very much on jockeys while the safety and health of stable employees, track riders, contractors and others receives little attention.

Of the 700 members of the ATA in Victoria only 20-30 employ more than 20 people. Many of the smaller training establishments are family operated and may train 3 or 4 horses. However, there appears to be little correlation between the size of organisation within the sector and degree of hazard management. Many of the training establishments have not matured in their management of OHS and lag behind standards expected in other industries. It is estimated that less than 25% of workers in

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1 It is unclear at the time of writing whether this fatality has been recorded within the WorkSafe database.
the industry finished secondary schooling and probably impacts on OHS development.

In regard to racing clubs and training and race track management, the operator-user relationship in regard to OHS is ill-defined and causes confusion. There are differing standards of OHS at clubs and hazard inspections, track supervision and communication with users are inconsistent. At some clubs maintenance work and other club activities conflict with training activities.

The tracks are shared workplaces and while users such as trainers have responsibility for the safety of their employees, they have little control over the workplace, its operation and risk. There is a widespread perception that hazard reports are not acted upon by facility managers and this, in turn, discourages the reporting of hazards. The relationships between different parties at some facilities lead to reluctance to report hazards for fear of repercussions.

Further confusion in regard to responsibilities and lines of reporting arises in regard to jockeys and track riders who ride for a number of trainers at one or more training tracks. It is understood that licensed jockeys are regarded as employees of RVL for workers’ compensation purposes, when they are riding horses at licensed training facilities or race tracks. However, information collected during Phase 1 indicates that on some occasions jockeys claim for injuries against trainers if they are injured while riding track work at licensed tracks. Few trainers appear to understand the injury recording and workers compensation claims processes. Further, it is unclear whether jockeys’ remuneration is recorded by trainers for the purposes of premium payments and thus how claims may create an incentive for improvement of workplace safety conditions and practices. In regard to track riders (i.e. riders who are not registered jockeys) some may be deemed to be contractors and the responsibility for payment of workers compensation premium and the cost of injuries is sometimes unresolved.

In recent years the number of races and the number of horses has increased having a direct influence on exposure to risk. Work is also completed at a greater pace and fatigue appears to be a growing problem among trainers, stable employees and jockeys with a greater number of races to attend, more time spent travelling, and more days and longer hours being worked. This leads to difficulties in attracting employees with experience with horses and limits the time available for trainers to communicate with staff about the work and the idiosyncrasies of the individual animals.

Jockeys have been the focus of some attention in regard to fatigue. While rules limit the number of races and racing days that jockeys may ride, limited recovery time on race days, increasing amounts of time spent travelling and uncontrolled track riding compound the problem. Wasting and dietary issues further compound the fatigue problem.

Fatigue appears endemic in the industry and not limited to jockeys. The extended work hours and scheduling of work appear to be a result of entrenched practices more than they are to meet the industry needs and work rest cycle needs.
There appears to have been little if any health-related empirical research used as an evidence base for establishment of riding weights. Thus there is little understanding of the short and long term, physical and psychological health impacts of maintaining low weight levels through chronic malnutrition, wasting, and dehydration on young and older males and females.

### 3.2.2 Work environment

Many of the issues that arose during the Phase 1 work in regard to the work environment stemmed from design and maintenance that has not adequately accounted for the nature of thoroughbred race horses and the needs of the people working with those horses. Safe design principles do not generally appear to be applied and stakeholder consultation is generally lacking. Design and maintenance of public areas appears to be a higher priority than the design and maintenance of areas where people work with horses and where modifications to public areas are made, it is sometimes at the expense of horse areas and sometimes compromises worker safety.

A number of work environment issues are specific to training facilities and establishments; others are specific to race day activity; while some are common to the race course and training facilities and establishments.

The shape of some training tracks and in particular the radius and camber of bends appears to present problems. However, there appears to be little empirical evidence to support the development of ideal radii and camber.

At gaps that permit crossing of concentric training tracks and access to and egress from tracks there are varying standards of design and gap maintenance. Some gaps offer only limited visibility in regard to through traffic and some lead to congestion. The rail design at some gaps can distract horses and encourage them to attempt exit before the rider is prepared. Some gaps permit free egress of loose horses.

![Figure 7 Gaps at Kyneton Race Track](image)

Tie up stall accessibility, size (height and width) and floor surfaces vary considerably. Narrow stalls limit the ability of stable employees to walk a horse in and turn it around safely, and low roofs can restrict a horse’s movement. Some partition rails are
high and some are low and the position of the tie rings on these rails may not suit the animals. Some stalls have concrete floors with a smooth finish which becomes slippery when wet with mud, hoof oil and urine. Those with a rough finish can become slippery over time as a result of wear. In some stalls rubber matting is provided to protect hooves as well as the floor surface but this can become slippery and can be a tripping hazard. Wash bays and slopes similarly can become slippery. While there is some experimentation with different surface treatments underway at facilities in Victoria, the results at this stage are inconclusive.

Surfaces around swimming pools at training facilities similarly become slippery and the shape of the pool, hand rails and the design of crossings vary considerably.
On race day, track entrance design and operation can lead to congestion and queues of horses. Typically, these horses have just disembarked from floats after what might have been a long journey and are in an excited state. On arrival at the entrance they are logged by a race official and allocated a stall and at peak times a queue can develop, exposing handlers to higher risk.

At many race tracks, stalls and exercise yards are designed such that public have free access and may walk in among the animals. At some tracks, horses must cross the public path to reach stalls, etc. In all cases, where members of the public may enter the same space as the horses there is a chance that the animals will become agitated or maybe frightened and this may impact on the horse handler. In general, members of the public and in some cases even owners visiting their horses do not have even basic knowledge of horse behaviour and are unaware of the impact of their own behaviour on the horse and the consequences for the people working around that the horse. Around tracks and yards there are often objects (e.g. taps, unprotected wire on fence posts, etc) that may snag straps and bridles.
Where fences have been erected to separate the public from horses, the accessibility by those that require access is sometimes limited as a result and this leads to the taking of short cuts through the paths of other animals as well as the scaling of the fences. In some cases yard design leads to congestion and horses and their handlers being forced into close proximity of other horses.
Children are unaware of the consequences of their behaviour near horses. They are often excited by the horses and run around near the animals and startle them. Parents that are unaware of the risks to handlers and the children often take children close to the horses to view them.

Mounting yards vary in design; shapes and sizes vary and path surfaces may be grass, sand, bitumen or other. The location and construction of fences generally allow spectators near the horses. A major criticism of mounting yards relates to the direction of rotation that clubs insist upon; because horses are always led from the left (near side) clockwise rotation always places the strapper between the animal and the fence increasing the risk of crushing. It is suggested that this direction of rotation
makes it more likely that a horse kick will be towards the centre of the yard and away from the spectators.

Figure 16 Direction of rotation in mounting yards increases risk to strappers

Further to this, insistence that strappers arrange the horses in race number order leads to congestions and increases risk to strappers.

While public access to mounting yards is restricted by gates and signs advising public about the restrictions, it is common to see public in yards as well as owners and others whose attendance is not strictly necessary. The complete separation of public from horses and workers is rarely successful.

Figure 17 Public and non-essential persons in mounting yards is quite common

Many problems are common to the race course and training facility. These include float park design and security that allow escape of loose horses and access by the public. Float parks that are shared with the public present even greater problems as a result of motor vehicle and pedestrian movement startling animals.
Figure 18 Float parks can be insecure and motor vehicles can startle horses

Roadways near race tracks are sometimes shared with horses and in the absence of facilities to separate the traffic, close interaction may occur.

Figure 19 Horses often use roadways near race tracks

There has been much discussion within the industry in regard to running rail design and the consequences of collision were brought into sharp focus as a result of an incident during the 2005 spring carnival. Collision with the rail itself can cause it to tear leaving rough, sharp edges and serious lacerations to riders’ legs have resulted from such events. The upright supports for the rails present a spear-like hazard when they become detached from the rail during a collision. Debate about safer alternatives continues.
Some objects next to the track such as star pickets or structures behind the running rail present an impact hazard to a falling rider.

Other problems are presented by objects that will adversely affect horse behaviour, including objects that might move in an unexpected manner such as litter; banners attached to running rails; umbrellas and marquees; and objects that the horse may not have previously seen in a particular position, including maintenance workers’ equipment; earthworks; bins; and witches hats. In addition music and other entertainment provided at race meetings may cause anxiety among animals.
At trainers’ establishments there are numerous issues that impact on the health and safety of employees, many of which have been identified through the WorkSafe-RVL Stewards program of visits and are reported separately by those investigators. In regard to risk directly related to horses, stable and stall design and other issues such as wash bay surfaces, as discussed above, are clearly important.

Essential basic facilities necessary for health such as toilets, clean water and eating places are often absent or of low standard at training and racing facilities.
3.2.3 Equipment

Starting barriers have evolved in their design in recent years but the design focus remains on the horse rather than the barrier attendant who requires access and egress on foot and the jockey and barrier attendant who may both need rapid escape if a horse becomes agitated or cast. Jockeys and barrier attendants report that the equipment serves its purpose with structural members being suitable for gripping while effecting escape. The suitability of these structural members for such use is, however, serendipitous and the equipment design does not appear to have incorporated safe design and ergonomic principles.

![Image](image)

**Figure 24** Barrier design does not appear to have incorporated ergonomic design principles

Riding equipment such as vests and helmets are currently undergoing review within the industry. However, during Phase 1 numerous reports of worn, aged and faulty gear such as irons and saddlery were received and it was noted that there is a wide variation in the standard of gear between trainers, jockeys and stable employees. Failure of gear while riding can have serious consequences.

3.2.4 Rules and procedures

During Phase 1 it became apparent that differing rules between tracks cause problems. An example frequently offered was to do with fast horses passing slow horses on training tacks. At some tracks fast horses pass on the inside while at others they pass on the outside owing to gap design and position. Another rule that is inconsistently applied was to do with loose horses and their capture.

Procedures in regard to riders falling during training vary and there was some perception that the use of sirens can increase the risk to other riders. There was a strong perception that rules regarding public access to horse areas varied and were not adequately enforced.

In regard to racing, concern was expressed about inconsistencies between stewards in the enforcement of rules while there was general agreement that recent closer scrutiny of jockeys riding tight was positive. Riding styles adopted in Australia result in closer riding than elsewhere and this not only leads to an increased risk of falls but also a
greater likelihood of injury as a result of a fall. There is uncertainty about the relative merits of different riding lengths and the position of toes versus foot in irons.

Provision for first aid and medical attention varies between tracks and there were reports of paramedics leaving race meetings immediately after the last race rather than when they were no longer likely to be needed, when in fact incidents have occurred in stalls areas. There were reports of people who had experienced incidents during races only realising later that they required medical attention.

Horse behaviour and its unpredictability significantly influences exposure of workers to risk and stakeholders widely recognise the role that horse breaking plays in establishing behaviour patterns in the animals. Currently horse breaking is unregulated and thus there is no control over the quality of the breaking process.

3.2.5 Training and Education

The escalating numbers of horses in the industry is increasing demands for staff at the same time that the long hours and relatively low pay are making the industry less attractive to potential employees. As a result, recruiting people with experience of horses is becoming more difficult. Education and training are therefore increasingly important but difficult to deliver given the small business base of the industry.

There is a widespread recognition of the need for people working in the industry to develop an in-depth knowledge of horse behaviour and thus how their own behaviour in the proximity of horses can reduce the risk of injury to themselves and others. This knowledge is developed through work with others having knowledge and experience. However, increased work pressures and fear of litigation is leading to reduced opportunities build such workplace-based experience.
4 Discussion

The Phase 1 work found that there is an increasing amount of activity relating to injury prevention in the sector. However, most of this activity is focusing on personal protective equipment for jockeys in particular and on jockey health in regard to nutrition, hydration and fatigue. There is not a great emphasis on higher order, design and engineering controls that will lead to work and equipment design improvement nor is there emphasis on organisational change. Further to this, there is a paucity of written information on controlling risks in the racing industry (Turner et al, 2002). Notwithstanding this, an outcome of the Phase 1 work has been a review of the international and Australian scientific literature relating to OHS in the thoroughbred racing industry and this is presented as a separate paper and will be submitted for publication in a peer-reviewed journal.

4.1 Organisational and work environment issues

4.1.1 OHS Management

A number of OHS management issues are in need of examination by RVL and club and training facility managements. These include clarification of, and education regarding, the respective responsibilities of trainers, facility managers, jockeys and contractors in regard to reporting and controlling hazards at training tracks and racecourses. There is currently a lack of clarity in regard to the employment status of some contractors such as track riders who work for one or two trainers and of trainers who train predominantly for one or two owners. Similarly, the procedures for reporting incidents and injuries and for making workers’ compensation claims needs to be clarified for the respective parties.

In regard to reporting, future prevention activities and OHS performance measurement will benefit from improved data collection i.e. more comprehensive reporting as well as reporting of greater detail of the circumstances of incidents. It is understood that RVL is currently piloting the development of improved injury recording systems through a VWA WIISF project. It is suggested that the success of such reporting systems will be influenced by the success of RVL in educating club and facility management and users of those premises about their responsibilities in regard to hazard reporting and hazard control. This in turn will require those that have responsibility for hazard control to be seen to be more responsive to hazard reports and proactive in hazard control. Following improvements in hazard reporting, RVL may choose to play a greater role in the monitoring of OHS performance at clubs through the use of lead indicators such as increasing numbers of hazards being reported and decreasing close out times on those hazards.

In regard to hazard identification, risk assessment and risk control, there is a need for more formal consultative processes to be established at club level and the industry would benefit from a greater degree of sharing of information about organisational and physical risk controls.
The flow of funds within the industry between RVL, clubs, trainers, Tabcorp, jockeys, trainers and owners is not widely understood and influences the perceptions of stakeholders regarding expenditure on OHS at premises and in turn influences expectations about hazard reporting and hazard control activity.

4.1.2 Work Environment & Equipment

It is clear that there is a very wide variation in the standards of workplace design and equipment used in the industry and both have a very significant influence on the safety of employees. Currently workplace design is heavily influenced by history and the needs of the race-going public. It is suggested that design advice should be provided to racing clubs and trainers regarding priorities for and the nature of workplace modifications.

The focus of the workplace changes may be:

- Design of entry and exit to tracks and gaps that improves horse traffic management during track riding;
- Design and organisational features that manage vehicle, horse and human traffic interactions in float parks;
- Physical design features that maximise human and horse separation at mounting yards and in and around stables at trainers’ establishments;
- Physical design features that minimise the consequence of horse and rider collisions with running rails;
- Physical and organisational design features that minimise risk at starting barriers; and
- Organisational and design features that minimise the placement or ingress of objects and materials at tracks that adversely affect horse behaviour.

Simple design guides may be produced that capture and summarise the key principles that should be addressed in the design and modification of the elements of the work environment.

Some riding equipment is currently under review through other projects, although the focus of these projects is largely upon personal protective equipment. It is suggested that starting barrier design and operation and running rail design and installation should undergo an ergonomic and engineering review.

In regard to riding gear, a parallel has been drawn between the requirement for regular inspection and testing of lifting gear in other industries. It is suggested that the feasibility of such a program in the racing industry could be explored.
4.1.3 Education & training

During Phase 1 it emerged that there is a need for anyone working in the industry to receive an induction that delivers an understanding of not only the workings of the industry that impact on OHS but also of horse behaviour and horse-related risks. It is suggested that anyone undertaking work in the industry should undergo basic training and obtain a “passport” before commencement. Underpinning this is the belief that not only are people at greater risk of injury if they lack basic knowledge of horse behaviour and the operation of the industry, but they also expose others working with horses to greater risk. It is suggested that “passport” training become a base for a cumulative sequence of training and education that different occupation groups undertake. A very rudimentary framework for this is presented in Table 3 below. This framework is not intended to be comprehensive or definitive and is suggested here to stimulate discussion and possibly inform activity under the RVL WIISF program.

It is suggested that industry bodies should develop, own and manage curriculum materials, delivery and professional development of those delivering the training. Delivery in this industry requires deviation from traditional pedagogic approaches and development of innovative approaches.

In addition to the training and education suggested below, there is also a need for trainers and their employees to receive inductions prior to commencement of activities at different training tracks.

Table 3 Education and training framework

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Basic OHS induction “Passport”</th>
<th>Stables, transport, track and race safety</th>
<th>Training &amp; track riding</th>
<th>OHS Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Principles</td>
<td>Practice</td>
</tr>
<tr>
<td>Anyone working in the industry</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(inc contractors &amp; owners)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable hand and strapper</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Barrier attendants</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Clerks of course</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Track riders</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stable foreperson</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Assistant Trainer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Jockey</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Breakers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Starters</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Trainer</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Club officials</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Stewards</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Further to the issues regarding rules discussed above, it is recommended that the matter of horse breaker accreditation and licensing is given consideration. This licensing or accreditation may be linked into the OHS education and training framework suggested above.

Linked to fundamental horse behavioural traits is horse training in regard to preparedness and fitness to race. Current barrier certificates could possibly be extended to require a horse to have a “certificate to race” such that it is ensured that an animal has participated in barrier trials as well as registered trials. Throughout Phase 1 it has been suggested that the licensing of trainers could be developed to make the attainment of a license more challenging and the retention of a license could be linked to certain performance measures. Central to these could be OHS training and OHS performance.

In regard to racing rules concerning weight, it is suggested that empirical research is undertaken, and a review of developments in other sports such as rowing and wrestling is completed, to explore the impact on short and long term physical and psychological health of fatigue, fitness, wasting, nutrition and hydration, and body-fat to body-mass proportions.
5 Conclusion

The size of the OHS problem within the thoroughbred horse racing industry is difficult to determine. There is widespread under-reporting of incidents and injuries and records of injuries are, to a large extent, limited to those that are more severe and have led to workers’ compensation claims. There are many near-miss incidents and incidents where a minor injury occurs where there was the potential for serious injury to have been suffered; chance prevented this being the case. Thus the estimation of risk and prioritisation for risk control is problematic.

The majority of reported injuries are associated with horses and the majority of those are falls from horses. While there is a great deal of interest in falls experienced by jockeys during races, approximately one third of injuries reported by jockeys were sustained during track riding and a large number of injuries are sustained by track riders during training activities.

There is very limited written information about risk and risk control in the industry. The outcomes of focus groups and informal discussions with a cross section of personnel that work with thoroughbred horses suggest that there is a wide range of OHS management; work environment; equipment; rules and procedures; and training and education related issues that increase the risk of injury. Many of these are related to the work environment and equipment design and maintenance that address the needs of public rather than workers and fails to recognise the impact on and consequences of horse behaviour. There is a widespread belief that horse breaking plays a significant role in the behaviour of horses during training and racing although this remains one of the few unregulated activities within the sector.

Lack of clarity regarding employer-employee and employer-workplace operator responsibilities leads to confusion, under-reporting of hazards and a lower than desirable level of responsiveness in regard to issues.

There is a low level of OHS education and training in the sector at a time when basic training is becoming more important as a result of inexperienced people entering employment. There are inconsistencies in the application of rules and procedures that apply to training and racing and in the absence of an evidence base it is possible that some rules may negatively impact on health.

Thus the Phase 1 work has identified a large number and wide range of issues that impact on the health, safety and welfare of personnel that work with thoroughbred horses. Many of these issues may be relatively easily resolved through cooperative approaches within the industry. The Phase 1 work has demonstrated that many personnel have a desire to contribute to the improvement of health and safety in the industry and they represent a wealth of experience that may be tapped in regard to development of practical and effective risk controls.

Recommendations for improvement of risk control and support of change in the industry are presented for consideration in section 6 of this report.
6 Recommendations

The following recommendations have been formulated following the collection of information provided to the SDF project team by people who work with horses within the racing industry during formal research processes that included a series of focus groups. The basis for this information was verified through informal processes that included site visits, an industry workshop and liaison with key industry representatives. The recommendations are proposed for consideration by industry stakeholders.

Recommendation 1 Hazard Management

A structured approach to hazard management at many race tracks and training facilities is required to improve the level of risk control. While it is suggested that simple OHS management tools might be made available in a user-friendly toolkit, it is recommended that any materials are developed with a small-business model in mind and as such paperwork is minimised and practical tools are central. A toolkit such as this would be associated with training, education and mentoring discussed below.

Recommendation 2 Incident Reporting

To identify priorities for action more comprehensive and detailed reporting of the circumstances of incidents (i.e. near miss and injuries) is required. RVL is currently piloting an improved injury recording systems through a VWA WIISF project. The success of this will require club and facility management and users of those premises to understand and act on their responsibilities in regard to reporting and hazard control.

Recommendation 3 Consultation

In regard to hazard identification, risk assessment and risk control, there is a need for more formal consultative processes to be established at club level and the industry would benefit from a greater degree of sharing of information about organisational and physical risk controls.

Recommendation 4 Hazard Control

Those that have responsibility for hazard control need to become more responsive to hazard reports and proactive in hazard control. Following improvements in hazard reporting, RVL may choose to play a greater role in the monitoring of OHS performance at clubs through the use of lead indicators such as increasing numbers of hazards being reported and decreasing close out times on those hazards.
**Recommendation 5 Design Advice & Guides**

It is suggested that design advice should be provided to racing clubs and trainers regarding priorities for and the nature of workplace modifications. The design advice should be developed by people having knowledge of horse behaviour as well as the needs of the range of people that interact the animals at the workplace. Simple design guides may be produced that capture and summarise the key principles that should be addressed in the design and modification of the elements of the work environment.

Any steps toward workplace modifications should invoke consultative processes as defined and required by OHS legislation.

The focus of the workplace changes may be the following:

- Design of entry and exit to tracks and gaps that improves horse traffic management during track riding;
- Design and organisational features that manage vehicle, horse and human traffic interactions in float parks;
- Physical design and organisational features that maximise human and horse separation at mounting yards and in and around stables at trainers’ establishments;
- Physical design features that minimise the consequence of horse and rider collisions with running rails;
- Physical and organisational design features that minimise risk at starting barriers; and
- Organisational and design features that minimise the placement or ingress of objects and materials at tracks that adversely affect horse behaviour.

**Recommendation 6 Track Equipment**

It is suggested that starting barrier design and operation and running rail design and installation should undergo an ergonomic and engineering review.

**Recommendation 7 Riding Gear**

Some riding equipment is currently under review through other projects, although the focus of these projects is largely upon personal protective equipment.

In regard to riding equipment and saddlery, a parallel has been drawn between the requirement for regular inspection and testing of lifting gear in other industries. It is suggested that the feasibility of such a program in the racing industry should be explored with a view to producing testing methods and schedules.
Recommendation 8 Education, Training and Mentoring

There is a need for development of a suite of education, training & mentoring programs tailored to the varying needs of different employees within the industry. It is suggested that this suite of training should range from basic training & mentoring that anyone undertaking work in the industry should undergo, such that they obtain a “passport” before commencement; through to hazard management training for those holding managerial responsibilities that impact on the health and safety of others. A simple outline matrix of education and training that might be addressed within the suite is included within this report.

It is recommended that racing industry bodies should develop, own and manage curriculum materials. They should also manage delivery and professional development of those delivering the training. Delivery in this industry requires deviation from traditional approaches to training and development of innovative approaches.

Specific elements of the training should include explanation of the respective responsibilities of trainers, facility managers, jockeys, stable employees and others, including contractors, in regard to reporting and controlling hazards at training tracks and race tracks and how those responsibilities may be met.

The training should also clarify the employment status and associated responsibilities of some contractors such as track riders who work for one or two trainers and of trainers who train predominantly for one or two owners. Within this, the procedures for reporting incidents and injuries and for making workers’ compensation claims needs to be clarified for the respective parties.

For the purposes of creating realistic expectations and encouraging reporting of and control of hazards by those carrying the responsibility, the flow of funds within the industry between RVL, clubs, trainers, Tabcorp, jockeys, trainers and owners should be clarified.

In regard to fatigue (see also recommendation 11 below), training and education programs should include guidance on fatigue management and management of sleep debt.

Recommendation 9 Induction at Tracks

In addition to the training and education suggested below, there is also a need for trainers and their employees to receive inductions prior to commencement of activities at different training tracks.

Recommendation 10 Breaking In and Horse Education Standards

Given the key role that they may play in establishing behaviour patterns and traits within the animals they work with, it is recommended that consideration is given to the licensing and accreditation of horse breakers and pre-trainers.
Recommendation 11 Personal Health

The areas of individual health (physical and psychological) as affected by nutrition, hydration, fatigue and hygiene require a comprehensive and coordinated approach for all people in the industry working directly with the horses.

In regard to racing rules concerning jockey weight, it is recommended that empirical research is undertaken, and a review of developments in other sports such as rowing and wrestling is completed, to explore the impact on short and long term physical and psychological health of fatigue, fitness, wasting, nutrition and hydration, and body composition proportions. This research should include knowledge and skills from the fields of occupational health, industrial medicine and the sports sciences.

In regard to fatigue further accurate information on work rest schedules for the various categories of work in the industry are required followed by and industry review of work scheduling to manage fatigue.

Recommendation 12 Industry OH&S Improvement Action Plan

Culture change in the industry is necessary such that the health and safety of employees becomes a higher priority than the health and safety of horses. To some degree, the recent increase in OHS-related activity within the industry is affecting this culture, but the safety and health of employees remains a relatively low priority.

Strategies and activities that will influence the culture will include those listed above; not least of these will be education and training of employers and decision-makers about the human and financial costs to the industry that result from continuing to afford OHS less attention than horse welfare. However, other strategies will need to be explored to affect widespread and maintained change.

It is recommended that an action plan for OHS improvement in the industry is written by the members of the WorkSafe Victoria Racing Industry OHS Working Group.
Appendix 1

WorkSafe Victoria Safety Development Fund
Prevention of injuries that result from working with horses within the Victorian thoroughbred horse racing industry
Focus Group Meeting

Question Route

Welcome & Introduction (11:00 hrs) 10 minutes

- Introductions
- SDF Project
- Size of the Problem
- Aim of the Meeting

Introductory Question (11:10 hrs)

- Why do you think we should bother with health and safety in your / this industry? 5 minutes
- Where do you think your industry sits as a dangerous occupation? 5 minutes

Transition Questions (11:20 hrs)

- How bad do you think it is? 15 Minutes
- Do you think people in the industry really understand? 15 Minutes
- Have things in the industry change over the years for better or worse? 15 Minutes

Key Questions (12:05)

David’s Star – Work of David’s Star

- What is it that causes the injuries and where are the key problems? 15 Minutes
- In your experience what solutions have you seen and do you know where we should be looking for the solution? 15 Minutes

Transition Questions (12:35)

- What sort of things do we need to do to bring about change in the industry? 15 Minutes

Ending Questions (12:50)

- All things considered do you think we are going to be able to make change? 5 minutes

Conclusion & Close (13:00) 5 minutes