The contents of this publication were compiled by the Australian Racecourse Managers Association Inc. from papers presented plus audio-taped comments and general discussion. Every effort has been made to ensure the information presented is a correct record of conference proceedings however the Australian Racecourse Managers Association Inc. assumes no responsibility for inaccuracies, errors or omissions.

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Acknowledgements

These proceedings, as in past years, represent the efforts of many people who contributed to the planning, organisation and running of the conference, the support of a number of companies and organisations, and the keen interest and input from all delegates and participants.

Development and management of the conference was in the capable hands of the Australian Racecourse Managers Association Committee: Lindsay Murphy (Chairman and Treasurer), Martin Synan (Deputy Chairman), Committee - Geoff Murphy, Murray Pyke, John Tonani and Warren Williams (Committee and Secretary). We must also thank Peter Stubbs CEO and James Cataldo Racecourse Manager at Canberra Racing Club (CRC), with their capable and obliging staff who gave valuable assistance with programming and venue organisation.

Sponsorship of the venue, facilities and catering was provided by the Canberra Racing Club. Horticulture Australia Limited again gave valuable assistance with funding derived from the turf research levy.

Our trade sponsors were integral to the success and viability of the conference by their presence and displays, their interaction with delegates, and their sponsorship contributions. The contributions from: Platinum Sponsors – Barriers International, Dalton Consulting Engineering, Evergreen Turf, Fornells Australia, Global Barrier Systems, PGG Wrightson Turf, Rodney Industries, Steriline Racing, Strathayr Turf Systems, Sustainable Turf Renovations and Toro Australia; Gold Sponsors – Contour Consulting Engineers, Globe Australia, Green Horticultural, NuTurf Australia, and Silver Sponsors – M Collins and Sons, Programmed Property Services and Redexim Charterhouse. Turfcraft International must also be acknowledge for the continual sponsorship of the Racecourse Managers Awards.

The availability for delegates to inspect the entire Racecourse facility at Thoroughbred Park, Canberra Racing Club ensured all attendees were able to study the operation and processes in which the CRC staff operate. Thanks must go to James Cataldo and track staff for preparing the course for the inspection. Additionally we must also thank Australian Insitute of Sport and Canberra Stadium for providing excellent tours of each facility.

For those who presented papers or led discussion, as listed in the proceedings, are sincerely thanked for their time and input which ensured that participants had a most rewarding conference.

Finally, the staging of the conference would not have been possible without the positive support and co-operation of the Chairman and Directors of Canberra racing Club.

Warren J Williams
ARMA and Conference Secretary
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Executive Summary

• A survey of grass racecourses in Australia in 1995, funded by the Rural Industries Research and Development Corporation (RIRDC), found a wide variation in the level of racecourse management expertise and technical knowledge. In addition, there was a sense of isolation by many racecourse managers and an expressed need for more information relevant to their jobs.

• This led to Racecourse Managers Conferences being held in subsequent years, at Rosehill, Moonee Valley, Doomben, Morphettville x 2, Melbourne, Randwick, Ascot, Caloundra, Launceston, Ballarat, Newcastle, Flemington, Eagle Farm and in 2010, the 15th Australian Racecourse Managers Conference, based at Thoroughbred Park Racecourse, Canberra Racing Club, Canberra, ACT from August 16-18.

• The racecourse conference objective was: “Improvement of racing industry communication, education and knowledge on issues of racetrack design, development, maintenance and performance for the advancement of economical and sustainable strategies for racecourse management”.

• 101 people attended the conference, including 64 racecourse managers, organisations throughout Australia and New Zealand, plus 37 suppliers and consultants to the racecourse industry, research workers and turf specialists.

• The objective was achieved through discussion of papers and presentations on racing industry developments. The 2010 conference provided delegates with the following:
  1. current trends towards the installation and use of “plastic running rails”,
  2. synthetic track and their current position as training and racing surfaces within Australia,
  3. research and development session – “Undertaking your own Turf Trials”,
  4. racecourse management practices,
  5. newly developed tracks throughout Australia – Werribbee and Gawler,
  6. environmental management issues and Epar Racing progress,
  7. turf nutrition, disease, turf research and general liaison between racecourse managers and other turf managers and specialists,
  8. the impact of racing surfaces on the Equine.

• The conference was again rated highly by delegates and sponsors through feedback during conference.

• The 6th Annual General Meeting of the Australian Racecourse Managers Association (ARMA) was held during the conference.

• Recognition of the importance of high standards of racecourse management to the racing industry was made by the presentation of the 12th Australian Racecourse Manager of the Year Award to Tim Bailey, Melbourne Racing Club – Sandown Racecourse. In addition, Bill Shuck, and Mark Hart were recognised for Significant Contributions at a Metropolitan and Regional Racecourse respectively.

• The recipient of the Steriline Racing/ARMA Racecourse Management Scholarship for 2010 was Rebecca Dynon, Tatura & Shepparton Racing Club, who will study racing operations as guest of the Hong Kong Jockey Club and Singapore Turf Club.

• The inaugural Anco Racetrack Event Education Award was awarded to Liam O’Keeffe, Warrnambool Racing Club.

• The conference enabled racecourse managers to gain and exchange information on the latest developments in research, racecourse development, track maintenance and resource management, and to learn from colleagues’ experiences and inspection of operations at major race and training tracks and racing enterprises. This will result in increased ability to practise their profession, leading to higher standards of racecourse management. Benefits accrue from improvements in track performance, appearance and life, and associated economic and environmental advantages for racing clubs and the community.

• The conference also strengthened the resolve of racecourse managers to apply accepted best practices, modified according to their particular situation, and armed them with the knowledge to justify their actions to the many stakeholders in the racing industry.

• Delegates welcomed the news that the continuation of these forums would be organised 2011. For the first time Australian Racecourse Managers Association and the New Zealand Racecourse Managers Association will hold a joint conference to be hosted in Christchurch, New Zealand from August 7-10. We ask members and associates to consider attending this joint conference and ARMA Secretary will be seeking industry participants provide suggestions regarding topics, format and content for 2011.
Background

A survey of grass racecourses in Australia in 1995, funded by the Rural Industries Research and Development Corporation (RIRDC), found a wide variation in the level of racecourse management expertise and technical knowledge. In addition, there was a sense of isolation by many racecourse managers and an expressed need for more information relevant to their jobs.

This led to Racecourse Managers Conferences being held in subsequent years, at Rosehill, Moonee Valley, Doomben, Morphettville x 2, Melbourne, Randwick, Ascot, Caloundra, Launceston, Ballarat, Newcastle, Flemington, Eagle Farm and in 2010, the 15th Australian Racecourse Managers Conference, based at Thoroughbred Park Racecourse, Canberra Racing Club, Canberra, ACT from August 16-18.

Objective

The objective of the conference was: “Improvement of racing industry communication, education and knowledge on issues of racetrack design, development, maintenance and performance for the advancement of economical and sustainable strategies for racecourse management”.

Introduction

Delegates were welcomed to the conference by Lindsay Murphy, Australian Racecourse Managers Association (ARMA) Chairman. He acknowledged the generous support from the Canberra Racing Club, valuable funding contributions by Horticulture Australia, and individually thanked the sponsors: Platinum Sponsors – Barriers International, Dalton Consulting Engineering, Evergreen Turf, Fornells Australia, Global Barrier Systems, PGG Wrightson Turf, Rodney Industries, Steriline Racing, Strathayr Turf Systems, Sustainable Turf Renovations and Toro Australia; Gold Sponsors – Contour Consulting Engineers, Globe Australia, Green Horticultural, NuTurf Australia, and Silver Sponsors – M Collins and Sons, Programmed Property Services and Redexim Charterhouse. Turfcraft International must also be acknowledge for the continual sponsorship of the Racecourse Managers Awards.

Lindsay noted that the number of delegates and participants was 101 and included 64 racecourse managers, administrators and staff from 41 racecourses and racing organisations in Australia and New Zealand. Many delegates were again repeat attendees from previous years.

He acknowledged the valuable contribution to conference planning by ARMA Committee members, Geoff Murphy, Murray Pyke, Martin Synan, John Tonani and committee person and ARMA Secretary, Warren Williams. The final program was based on priority topics for discussion as determined by delegates at previous conferences. Lindsay concluded by wishing delegates a rewarding conference.
Sunday, August 15

Pre-conference activity day – Visit Capricorn Park Training Centre and then lunch at Gundaroo Pub and Matt’s wine Bar

Welcoming Reception and Registration, 6pm Winning Post Bar, Ground Level, Thoroughbred Park Racecourse
Canberra

Monday, August 16 (Day 1) – Rich Reward Room (2nd level)

7.30  Tea/Coffee and registration
8.00  Introduction – ARMA Chairman, Lindsay Murphy
8.10  Canberra Racing Club – History, operations, current developments by CRC representative
8.30  2009 Steriline Racing Scholarship Winner – Sean Bridges to present experiences at Hong Kong Jockey Club
9.15  Racing Victoria Limited current track reconstruction – C Stebbing Racing Victoria Limited
9.45  Sponsor Presentation – Steriline Racing

10.00  Morning Break
10.20  Sponsor Presentation – Manoeuvre Mow Sustainable Turf Renovations – Geoff Hatton
10.35  Research and Development session – Turf Trials – Andrew Peart AGCSA
11.20  South Australian track redevelopments – Jeremy Clapp FMG Engineering presenting Gawler reconstruction
12.00  Sponsor Presentation – Evergreen Turf - Peter Manning

12.15  Lunch and trade show
1.15  Sponsor Presentation – Toro - Pat O’Shannesy
1.30  Buses to Canberra Stadium and Australian Institute Sport
5.30  Trade Show with Sponsors and Drinks (Silks Room)
7.00  Day 1 closes

Tuesday, August 17 (day 2) – Rich Reward Room (2nd Level)

8.15  Tea/Coffee
8.30  Sponsor Presentation – Dalton Consulting Engineers – Shane Dalton
8.45  Running Rails – Plastic! Current update on the usage of plastic running rails for thoroughbred racing – Jason Kerr
      Racing Victoria Limited implementation plan for plastic rails and Why – C Stebbing
      Question and answers from delegates to Discussion panel J Kerr, C Stebbing and, M Goodie
9.45  Sponsor Presentation - StrathAyr Turf Systems
10.00  Morning Break
10.20  Sponsor Presentation – Fornells Australia – David Hawke
10.35  Synthetics Tracks, “There position within the Thoroughbred Racing Industry”
      Presentations by Murray Weeding – Cushion Track and James Cataldo Thorough Track
      Question and answers from delegates to Discussion panel M Weeding and J Cataldo
11.20  Equine injuries by Dr Andrew Clarke. Presentation titled - “The Impact of Racing Surfaces on the Equine”
12.00  Sponsor Presentation – Barriers International

12.15  Lunch
1.00  Sponsor Presentation – Rodney Industries
1.15  Machinery display, Sponsor Trade Show and machinery demonstrations (Silks Room and Ground level)
2.30  Thoroughbred Park Racecourse Inspection
4.00  Sponsor Presentation – PGG Wrightson
4.15  James Cataldo presentation on Thoroughbred Park Racecourse
4.45  Sponsor Presentation – Global Barrier Systems
5.00  Day 2 closes
6.30 Conference Dinner (Black Opel Room, 2nd Level) at Thoroughbred Park Racecourse
(Guest Speaker - Michael Milton - Disable Olympian)
(Racecourse Manager awards – Turfcraft A Dowie)
(Steriline/ARMA Scholarship presentation and award – J Fargher)
(Anco Racetrack Event Education Award – B Stephens)
(Door Prize – M Synan)

Wednesday, August 18 (Day 3) – Rich Reward Room (2nd level)

9.00 ARMA AGM
9.30 R and D Report from RCM ?? And Keith McAuliffe update
9.45 Epar presentation
10.00 New Zealand Conference, July 2010 and 2011 conference - Christchurch update
10.45 ARMA items and plans for 2011, 2012
11.00 Tea/Coffee and Close of conference for 2010

- Judy Fargher has offered to do a partners tour while the conference is in progress (Monday and Tuesday).
Racecourse Managers Awards – 2010

Awards were again presented in 2010 to recognise racecourse managers and to select an Australian Racecourse Manager of the Year for 2010 from amongst the awardees. The National Chairman Of Stewards Advisory Group (NCOSAG) as a “third party” are invited by ARMA to provide the nominations for this year’s awards. The awards are for persons who have made a significant contribution to racecourse management and for developing fellowship among racecourse managers. To be eligible for an award a nominee must conduct TAB meetings and have made a significant industry achievement.

Tim Bailey, Racecourse Manager, Melbourne Racing Club – Sandown Racecourse was the winner of the twelfth Turfcraft International Racecourse Manager of the Year Award for 2010. Other Award winners were: Bill Shuck, Racecourse Manager, Brisbane Racing Club for a Significant Contribution at a Metropolitan Racecourse; and Mark Hart, Murrumbidgee Racing Club for a Significant Contribution at a Regional Racecourse. The awards were announced at the Conference Dinner by Alastair Dowie, Editor of Turfcraft International, who congratulated all nominees and reported the following comments made by Stewards about the award winners.

**Tim Bailey** has been working and managing race tracks in Melbourne and Geelong for more then 15 years. Tim’s carrer has enabled his development skills for racecourse management through working at regional racecourses and to his current position at Sandown Racecourse for Melbourne Racing Club. Working alongside Jason Kerr (General Manager Racecourses, Melbourne Racing Club), Tim has provided a vital part for Victorian racing as the main mid week racing venue, conducting 40+ Secretary. He liaises regularly with the industry stake holders and combines with the Stewards to speedily resolve any serious track issues.

**Bill Shuck** has been a long term employee of the Queensland Turf Club the recently formed Brisbane Racing Club. Bill commenced work some 25+ years as a groundsman and has worked through the ranks to hold the position of Racecourse Manager, Queensland Turf Club and his current position as Racecourses Manager for Brisbane Racing Club – Doomben and Eagle Farm Racecourses. Bill has seen and been involved many changes within his racecourse employment and has learned his trade through dedication and the willing to listen and learn. Bill a known horseman with an excellent of the equine has fulfilled the role as race day starter for last 20 years. Currently Bill is managing two racecourses with a combined 94 race meetings.

**Mark Hart** is a course manager of considerable talent and over the years has turned the Murrumbidgee Racing Club, Wagga Racecourse, into what is widely acknowledged as a superb thoroughbred racing and training facility. Mark’s dedication has ensured the Wagga facility is in excellent order for racing 20+ times per year and in recent years Mark has developed new swabbing facilities, improved the safety for equine with new horse walking areas and the upgrades and maintenance of the Wagga Turf track. This has been signified through the very successful 2010 Murrumbidgee Racing Carnival.
Delegates

Matthew Allston - Tamworth Jockey Club
Graeme Amies - Racing Te Aroha
Adam Ayre - Muswellbrook Race Club
Stephen Andrews - Gold Coast Race Club
Rick Boxsell - Toowoomba Turf Club
Sean Bridges - Brisbane Racing Club
John Buhagiar - Murray Bridge Racing Club
Greg Carmody - Sydney Turf Club
James Cataldo - Australia Jockey Club
Alan Chapman - Canterbury Jockey Club
Barry Childs - Counties Racing Club
Matthew Clark - Yarra Valley Racing Inc
Graeme Colless - Evergreen Turf Victoria
Derek Collett - Cambridge Jockey Club
Dudley Corbett - Racing & Wagering WA
Shane Dalton - Dalton Consulting Engineers
Col Dunn - Racing Queensland
Peter Dutchie - Murray Bridge Racing Club
Tim Elligate - Anco Seed and Turf
Bernard Evans - Wyong Race Club
Garry Foskett - New Zealand Thoroughbred Racing
Alan Friscic - Ryate and Company
Mick Goodie - Victoria Racing Club
Paul Harper - Equestrian Surfaces
Mark Hart - Murrumbidgee Turf Club
Frank Henville - Rygate and Company
Brian Hoddy - Racing & Wagering WA
Michael Hoy
Jason Kerr - Melbourne Racing Club
Mark MacDonald - Moruya Jockey Club
Ross Mason - Dalton Consulting Engineers
George Mawhinney - Racing Queensland
Gordon Menzies - West Australian Turf Club
Stuart Miller - Living Turf
Lindsay Murphy - Sydney Turf Club
Geoff Murphy - Racing & Wagering WA
Brock Neeling - Northam Race Club
Kenneth Neff - GSA Bloodstock
Reg Nolan - Murray Bridge Racing Club
Brad Nott - Moe Racing Club
Liam O'Keeffe - Warrnambool Racing Club
Ron Paice - Steriline Racing
Brett Pascoe - Bendigo Jockey Club
David Patrick - Newcastle Jockey Club
Michael Raine - Sale Turf Club
Michael Raper - Bunbury Turf Club
Jim Roberts - Brisbane Racing Club
Steve Routledge - Kalgoorlie-Boulder Racing Club
Tony Salisbury - Moonee Valley Racing Club
Peter Salmon - Rygate and Company
Steven Schmidt - Kyneton Racing Club
Peter Semos - Global Turf Solutions
Craig Settle - Racing Tauranga
Brendan Short - Pakenham Racing Club
Bill Shuck - Brisbane Racing Club
Peter Slattery - Kilmore Racing Club
Charlie Stebbing - Racing Victoria
Maxwell Stone - GSA Bloodstock
Arthur Stubbs - Honorary Member
Martin Synan - Moonee Valley Racing Club
Morris Terzo - StrathAyr Turf Systems
Brett Thompson - Seymour Racing Club
John Tonani - South Australia Jockey Club
Chris Toogood - Sydney Turf Club
Murray Weeding - Racing Queensland
Nigel Wheelan - Tasracing
Ashley Williams - Tasracing
Warren Williams - Racing Queensland - ARMA Sec.
Trevor Woodham - Racing Queensland
Peter Stubbs - Canberra Racing Club
Andrew Peart - Guest Speaker - AGCSA
Andrew Clark - Guest Speaker - Equine Solutions
Jeremy Clapp - Guest Speaker - FMG Engineering
Keith McAuliffe - Turf Consultant
Matt Roach - Turf Consultant
Michael Milton - Guest Dinner Speaker
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ARMA Steriline Scholarship Presentation – Sean Bridges (Brisbane Racing Club)

The Racecourses:

1. Sha Tin Clubhouse  
2. Members' Main Entrance  
3. Racing Centre  
4. Parade Ring  
5. Grandstand  
6. Members' Forecourt  
7. Sha Tin Central Complex  
8. Public Main Entrance  
9. Concourse  
10. Grandstand  
11. Public Forecourt  
12. Quarantine Stables  
13. Trotting Ring – Quarantine Stables  
14. Trotting Ring – Racing Stables  
15. Quarantine Stables  
16. Equine Swimming Pool
1. Jockey Club Headquarters
2. Transit Stables and Racing Museum
3. HV Stand Entrance
4. Pavilion Stand Entrance
5. Members' Stand III Entrance
6. Members' Main Entrance
7. Public Stand
8. Public Main Entrance
9. Parade Ring
Racing Operations:

Track work
Sha Tin Racecourse
- Is conducted between 5 and 8.45am daily.
- Slow work on the smaller All-weather.
- Fast work on the large All-weather

The Horses
1. PP (Privately Purchased) - Raced
2. PPG (Privately Purchased Griffins) – Unraced 2-3 year olds.
3. ISG (International Sale Griffins) – Imported by the HKJC then purchased by owner at sale.
- All horses must be retired at 9 or 10.
- Around 300-400 are retired each year.
- Once retired, some are re-schooled at Beas River Country Club and then sent to one of The Clubs public riding schools.
Barrier Trials

- Every Tuesday and Friday on the All Weather
- Grass trials once a month
- Griffin trials every month. Griffins must trial before they can race.
- All trials taped for television

The Trainers

- There are 24 trainers employed by the club
- Each trainer must not have more than 60 horses in work
- At least 13 wins must be obtained during the season; otherwise their license may not be re-issued the following season.
- The trainer is paid a wage, per horse, by the club. Plus percentage of prize money.
- The trainer does not have to worry about paying staff or other bills. The Club handles everything.
- The Trainer MUST retire at 65.

There are currently 24 licensed Trainers (including 9 expatriates) in Hong Kong. Under the Club’s policy, each Trainer is allowed to train a maximum of 60 horses.
The Owners

- Owning a horse in HK is a very special privilege as there are more aspiring owners than horses available.
- Must be a member of the Hong Kong Jockey Club.
- Cannot own more than 4 horses at one time.

Track Ratings:

- Conducted day prior, morning of and 2hrs prior to first race.
- Penetrometer, Clegg, Going Stick and Shear Vein used.
- Soil sample used to determine moisture content and whether irrigation is necessary.
- ‘Good’ tracks would be classified as ‘Dead’ in Australia.
- Race morning Penetrometer reading at 4:30/6am
- Track inspection by racing management
- Pre-race irrigation
- Track measurements 2 hours before 1st race
- Collection of data and comments during races
- After race report
- Readings taken from 10 points along the track, 2m and 3m from running rail
- An initial reading taken for adjustments
- Weight is dropped 3 times with data after each drop
- Only initial and 1st drop is used for going analysis, others for monitoring surface hardness

<table>
<thead>
<tr>
<th>GOING</th>
<th>PENETROMETER READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRM</td>
<td>F</td>
</tr>
<tr>
<td>GOOD TO FIRM</td>
<td>G/F</td>
</tr>
<tr>
<td>GOOD</td>
<td>G</td>
</tr>
<tr>
<td>GOOD TO YIELDING</td>
<td>G/Y</td>
</tr>
<tr>
<td>YIELDING</td>
<td>Y</td>
</tr>
<tr>
<td>YIELDING TO SOFT</td>
<td>Y/S</td>
</tr>
<tr>
<td>SOFT</td>
<td>S</td>
</tr>
<tr>
<td>HEAVY</td>
<td>H</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GOING PENETROMETER READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRM F &lt; 2.50</td>
</tr>
<tr>
<td>GOOD TO FIRM G/F 2.50 - 2.75</td>
</tr>
<tr>
<td>GOOD G 2.75 - 3.00</td>
</tr>
<tr>
<td>GOOD TO YIELDING G/Y 3.00 - 3.25</td>
</tr>
<tr>
<td>YIELDING Y 3.25 - 3.50</td>
</tr>
<tr>
<td>YIELDING TO SOFT Y/S &gt; 3.50</td>
</tr>
<tr>
<td>SOFT S</td>
</tr>
<tr>
<td>HEAVY H</td>
</tr>
</tbody>
</table>

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**TO** Press Room  
**FROM** Director of Racing Operations  
**REF**  
**DATE** 24 January 2010  
**ENCLOSURES**

**SUBJECT** Going Report - 0745 Hrs., Sunday 24 January 2010

<table>
<thead>
<tr>
<th>Rainfall</th>
<th>Past 24 Hours:</th>
<th>Past 7 Days:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>Trace mm</td>
</tr>
<tr>
<td>24/01 Sun</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>23/01 Sat</td>
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<td>22/01 Fri</td>
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<td>-</td>
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<td>21/01 Thu</td>
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<td>-</td>
</tr>
<tr>
<td>20/01 Wed</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>19/01 Tue</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18/01 Mon</td>
<td>-</td>
<td>15</td>
</tr>
</tbody>
</table>

*Remarks: The Winning Post to Stable Bend and Back Straight (1400M to 1200M) will be watered for 5 minutes and 3 minutes for rest of course proper at 08:45am. It is planned to roll the track after the 7th race, weather permitting.

**GRASS TRACK – GOOD**

This morning’s track inspection showed that the track is ‘GOOD’, and the penetrometer reading is 2.71.

Today’s meeting is being held on the ‘A’ Course.

Weather forecast for today: Cloudy with one or two light rain patches and relatively low visibility. It will be cool in the morning. The maximum temperature will be around 18 degrees during the day. Moderate northeasterly winds, becoming easterlies.

Signed
J P Ridley

**cc:** Executive Director, Racing  
Chief Stipendiary Steward  
Facilities Services Manager  
Manager, Tracks

**E-mail:** Nigel Gray/ James Ross/ Walter Kwok/ Oonagh Chan/ C C Wong/ S K Yeung/ John Philip/ Dicky Liu/ Gary Lee/ BOCC/ Web Teams/ RCBOO
# SHATIN RACE MEETING

<table>
<thead>
<tr>
<th>DATE</th>
<th>1/24/2010</th>
<th>PENETROMETER</th>
<th>2.71</th>
<th>AWT clegg hammer</th>
<th>nil</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAIL POSITION</td>
<td>A</td>
<td>TURF GOING</td>
<td>G</td>
<td>AWT GOING</td>
<td>nil</td>
</tr>
<tr>
<td>RAINFALL (at 08:30)</td>
<td>nil</td>
<td>WATERING</td>
<td>(Win Post to 1200m) 3mins</td>
<td>(Home Bend) 3mins</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pen.</th>
<th>2m from rail</th>
<th>3m from rail</th>
<th>Average</th>
<th>shear vane</th>
<th>2m from rail</th>
<th>3m from rail</th>
<th>Average</th>
<th>Going Stick</th>
<th>Location</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS</td>
<td>2.5</td>
<td>2.6</td>
<td>2.6</td>
<td>TS</td>
<td>9.0</td>
<td>7.8</td>
<td>8.4</td>
<td>1</td>
<td>TS</td>
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<tr>
<td>WP</td>
<td>2.8</td>
<td>2.8</td>
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<td>2</td>
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<td>2.7</td>
<td>200</td>
<td>7.4</td>
<td>7.0</td>
<td>7.2</td>
<td>3</td>
<td>200</td>
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<td>400</td>
<td>7.8</td>
<td>8.2</td>
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<td>800</td>
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<td>7.4</td>
<td>5</td>
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<tr>
<td>800</td>
<td>2.8</td>
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<td>2.9</td>
<td>800</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>6</td>
<td>800</td>
<td>9</td>
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<td>2.7</td>
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<td>8</td>
<td>1200</td>
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<td>2.6</td>
<td>2.6</td>
<td>1600</td>
<td>7.4</td>
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<td>7.4</td>
<td>7.8</td>
<td>7.6</td>
<td>10</td>
<td>1600</td>
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</table>

Average: 2.72

Turf clegg meter from inner rail

<table>
<thead>
<tr>
<th>Pen.</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
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<td>6</td>
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<td>6</td>
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<td>1000</td>
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<tr>
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<tr>
<td>1600</td>
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<td>6</td>
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</tbody>
</table>

Average: 6.55

## 2 hours before 1st race:

<table>
<thead>
<tr>
<th>Turf clegg meter from inner rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-Jan A</td>
</tr>
<tr>
<td>Turf clegg meter from inner rail</td>
</tr>
<tr>
<td>Turf</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>AWT</td>
</tr>
<tr>
<td>Penetrometer</td>
</tr>
<tr>
<td>Turf clegg hammer</td>
</tr>
<tr>
<td>Shear vane</td>
</tr>
<tr>
<td>Going stick</td>
</tr>
<tr>
<td>AWT clegg hammer</td>
</tr>
</tbody>
</table>

## Last race meeting:

<table>
<thead>
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<th>Turf clegg meter from inner rail</th>
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</thead>
<tbody>
<tr>
<td>24-Jan A</td>
</tr>
<tr>
<td>Turf clegg meter from inner rail</td>
</tr>
<tr>
<td>Turf</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>AWT</td>
</tr>
<tr>
<td>Penetrometer</td>
</tr>
<tr>
<td>Turf clegg hammer</td>
</tr>
<tr>
<td>Shear vane</td>
</tr>
<tr>
<td>Going stick</td>
</tr>
<tr>
<td>AWT clegg hammer</td>
</tr>
</tbody>
</table>
### Standard Times:

Stand Times and their relation to track ratings

- The standard time is derived from race times over the past three racing seasons, and is calculated based on the average winning time adjusted to 123lb on good or faster going over the distance concerned.
- Race times and deviations from standard times are noted to monitor changes of track behavior.
- Particularly useful when racing under rain.
- Study trends of race times to see if the track is getting progressively slower or faster.

#### Standard Times

<table>
<thead>
<tr>
<th>Distance</th>
<th>Class</th>
<th>Group Race</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>1200</td>
<td>1:08.45</td>
<td>1:09.23</td>
<td>1:09.65</td>
<td>1:09.90</td>
<td>1:10.40</td>
<td>1:10.40</td>
<td></td>
</tr>
<tr>
<td>1400</td>
<td>1400</td>
<td>1:21.15</td>
<td>1:21.80</td>
<td>1:22.00</td>
<td>1:22.25</td>
<td>1:22.60</td>
<td>1:23.20</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>1600</td>
<td>1:33.65</td>
<td>1:34.40</td>
<td>1:35.05</td>
<td>1:35.45</td>
<td>1:35.65</td>
<td>1:36.85</td>
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</tr>
<tr>
<td>1800</td>
<td>1800</td>
<td>1:47.70</td>
<td>1:48.25</td>
<td>1:48.75</td>
<td>1:49.75</td>
<td>1:49.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>2000</td>
<td>2:01.85</td>
<td>2:02.90</td>
<td>2:03.65</td>
<td>2:04.10</td>
<td>2:04.50</td>
<td></td>
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<tr>
<td>2200</td>
<td>2200</td>
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<tr>
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<td>2:27.30</td>
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<td></td>
</tr>
</tbody>
</table>

Race Sectional Time Report

| Date: | 24-9-2010 |
| Race: | 06 |
| Race Type: | 05 |
| Race Name: | THE MERCEDES-BENZ HONG KONG CLASSIC MILE |
| Track: | HKG1 |
| Weather: | TURF |

| Race Time: | 24.30 |
| Sectional Time: | 24.30 |
| Place: | 1 |
| Brand No: | 01 |
| Horse Name: | K314 BEAUTY FLASH |

<table>
<thead>
<tr>
<th>1st Sec.</th>
<th>2nd Sec.</th>
<th>3rd Sec.</th>
<th>4th Sec.</th>
<th>5th Sec.</th>
<th>6th Sec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.30</td>
<td>24.03</td>
<td>24.08</td>
<td>22.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Running Pos:</th>
<th>Stakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-1-1</td>
</tr>
</tbody>
</table>

| Finish Time: | 1:34.39 |
| Stakes: | 1-1-1 |

---

*Standard times are calculated from race times over the past three racing seasons, and is calculated based on the average winning time adjusted to 123lb on good or faster going over the distance concerned.*

Handicapping and Race Planning Department
Jockey’s Comments
- Comments are collected throughout the race day to monitor changes in track condition
- Could enhance communication between users and track’s management

HKJC Jockey Opinion 24/01/2010

<table>
<thead>
<tr>
<th>Race</th>
<th>Jockey</th>
<th>Track Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>O Doleuze</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>E Lai</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>W Pike</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>J Lloyd</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>D Wyhte</td>
<td>Good</td>
</tr>
<tr>
<td>6</td>
<td>G Mosse</td>
<td>Good</td>
</tr>
</tbody>
</table>
Dirt Track:

All-weather track maintenance

- Again, maintained similar to Australian dirt's at Eagle Farm and Randwick but on a much bigger scale.
- Dedicated maintenance team makes procedures regimented and more time effective.
- Regular samples taken to achieve desired sand and organic levels.
- Regular Clegg Hammer readings to achieve desired compaction level.

<table>
<thead>
<tr>
<th>Going</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>wet fast</td>
<td>A condition after heavy rain and the races are run on a sealed track</td>
</tr>
<tr>
<td>fast</td>
<td>A condition after heavy rain and the weather has cleared and starting to dry the surface, the sub-surface is still very wet</td>
</tr>
<tr>
<td>good</td>
<td>The surface and sub-surface are both beginning to loosen</td>
</tr>
<tr>
<td>slow</td>
<td>A condition when the sub-surface has become loose after a dry spell</td>
</tr>
<tr>
<td>wet slow</td>
<td>This condition develops after a dry spell and there is a small amount of rain. Only enough rain to make the surface muddy but not enough to tighten the sub-surface.</td>
</tr>
</tbody>
</table>
Grass Track Maintenance:
Track Repair
- One day after every race meeting
- Similar process to Australia but on bigger scale
- Generally three groups of 10-15 workers
- Process involves raking of divots, patching of holes then re-planting divots with grass from nursery.

Light Weight track repair

Advantages
- Light weight
- Rolls down divots without affecting the going of the track
- Wide (5 meters) so majority of track can be covered between races
- Usually used prior to major race of the day.
- Not expensive (about AU$13,000)
Turf Species and its relation to Australia:

Kikuyu Happy Valley Racecourse- Winter

Advantages
- Creeping plant.

Disadvantages
- Slow growth.
- Greater distance between Nodes (compared to Australia).
- More upright than lateral growth.
- Non-tolerant to Hong Kong weather.
Poor Recovery.
Susceptible to competition.

Note the poor lateral growth

Tifton 419 Couch
Sha Tin and Happy Valley

Advantages
- Rapid Recovery
- Shorter internodes
- High tolerance to Hong Kong climate
- Good compatibility with ryegrass during winter

Disadvantages
- Susceptible to *Pythium*
- Goes slightly dormant in winter
- Needs to be over sowed with ryegrass

Taken on the 30\textsuperscript{th} October

Taken on the 14\textsuperscript{th} November
Seashore Paspalum
Kau Sai Chau Golf Course - Mid Winter

Advantages
- **Salinity Resistance.** Can handle upward of 8000ppm. Kau Sai Chau has a “Reverse Osmosis” plant for the De-Salination of Sea Water
- **Low Light Tolerance.** Better all round growth than Bermuda Grass in very low sunlight.
- **pH Adaptable.** Will tolerate a pH range of 3.5 (very acid) to 10.2 (very alkaline).

Disadvantages
- **Susceptible to Dollar Spot.** Although not as much at Kau Sai Chau.
- **Susceptible to Billbug and Armyworm in the Hong Kong Climate**
- **No Real Comparison to Kikuyu at this stage.**

**Kau Sai Chau Golf Course:**
- **KAU SA CHAU,** the only public golf course in Hong Kong, was created with funds donated by The Hong Kong Jockey Club to meet the growing demand for golf in the region.
- **Designed by Gary Player**
- **Consists of three 18-hole courses**
- **Land that the course is built on is on loan, without charges, from the government**
- **The Jockey Club provided HK$500m for facilities**
- **The Club is run by independent operators**
Every one of the three 18-hole course has their dedicated fleet of turf equipment to prevent cross contamination of turf species.

**Conghua Training Centre:**

- Sha Tin was established over 30 years ago and was designed to accommodate only 900 horses.
- The Number of races has increased from 616 in 1998-99 to 766 this season. An increase of 24 percent.
- For every additional 5 race meetings, the horse population must increase by 80 horses.
- Land subsidence problems affecting Sha Tin have forced the Club to seek a sustainable long term solution.
- A venue for the 2010 Asian Games Equestrian Events was needed.

**Background**

- The site has been established as part of the Specific Equine Disease Free Zone (EDFZ) providing safe passage for horses between Hong Kong and Conghua.
- The Site is 152 HA in area.
- Located 150km North of Sha Tin in China.
- The facility will stable 150-200 horses.
- After the Games it will provide a second Horse Training site to allow for refurbishment works at Sha Tin.
Racing in China
- In 1997, when China reclaimed sovereignty of the island, Beijing promised not to dismantle its horse racing program.
- Horse racing is a clear sign of capitalism in a country renowned for communism.
- Many observers see this project as the beginning of thoroughbred racing in China.
- Imagine the power of Asian Racing if this eventuates!

Steriline in Hong Kong:

What they said:

Tony McGovern - Head Starter
- “We have found the new back gates to definitely improve loading, especially the younger or first time horse”.

Steriline Racing in Hong Kong

Sterline Barriers

Grass Barrier Practice every Monday

Those Present: Chief Starter, Senior Steward, Assistant Starter, Club Official, and Jump

Outs are recorded for Television purposes.

Steriline Racing in Hong Kong

Sterline Barriers

Grass Barrier Practice every Monday

Those Present: Chief Starter, Senior Steward, Assistant Starter, Club Official, and Jump

Outs are recorded for Television purposes.

Steriline Racing in Hong Kong

Sterline Barriers

Grass Barrier Practice every Monday

Those Present: Chief Starter, Senior Steward, Assistant Starter, Club Official, and Jump

Outs are recorded for Television purposes.
“The new padding which is thicker and fuller has taken the noise away when a horse starts kicking so stops the ripple-on effect we used to get.”

“Obviously horses can’t catch their hips on the new gate, which also means jockeys legs aren’t being caught either, and the quick release handles make it easier to remove a fractious horse if need be”.

“I’ve always said to John Fargher, never stop trying to come up with new ideas for gates, the quieter you can get them the better”.

Conclusion

- How the Hong Kong Jockey Club are lucky enough to be in control of their own destiny.

and

- How ridiculously over governed the racing industry in Australia is.
September 22, 2003

South Australian jockey Cheree Buchiwi has had a leg amputated below the knee following a horrific fall in the last event at Cheltenham on Saturday.

Racing Victoria Tack Reconstruction- Charlie Stebbing (Racing Victoria)

Plastic Rails and Why?

2005

- There were a number of incidents that led to RV’s decision to investigate plastic rail e.g.
  - Jockey P. Saunders fall at Werribee in 2005
  - Jockey C. Payne falls at Kyneton in the same year.
  - and many other examples of serious injuries to riders

2006

- RV Board along with the VJA commissioned a report to review running rail safety.
  - Review video patrol footage of running rail incidents to identify the most common impact scenarios
  - Materials testing of rail components including the rail, post and footings
  - Development of computer models simulating common impact scenarios – DV Experts
  - Recommendations for ideal rail characteristics and testing regimen

- Key findings of the report
  - That railing systems that stay together during impact (continuous rail designs) are in general, much safer than frangible rail systems but that all post designs studied were found wanting in terms of potential for head and neck injury in direct impact scenarios.
• **Recommended Actions & Timing from the Report**
  - Oct 2006, Provide feedback to running rail manufacturers to encourage innovation of new or existing products
  - Nov 2006, Communicate findings to RV, National Jockey Safety Review, Chairmen of Stewards, ARB and Media
  - Dec 2006, Establish Crash Testing Facility at CTC
  - Feb 2007, Refine the draft Safety Evaluation Framework proposed in the report with a view to approving and publishing a safety evaluation framework and accreditation process for manufacturers
  - Ongoing, RV explore, develop and test alternatives to traditional rail designs, eg, track guides used in harness racing
  - Determine which products meet the industry’s standards or require further development to meet Australian conditions
  - March 2007, Present plan to RV Board & VJA to improve the safety of running rails in Victoria

2007

**Mawsafe Rail**

- A new running rail design was identified
- The new rail design features a unique footing

2008

**Fornell’s Rail**

- January 2007, the use of plastic rails was approved for the Geelong ThoroughTrack
- Fornell’s was selected to provide the rail for Geelong

**Mawsafe Rail**

- Dan Mawby’s design for a moveable ground anchor outperformed other designs
- In demonstrations to Melbourne metropolitan track managers this was the preferred method for anchoring the running rail.
• May 2008 installed at Cranbourne Training Complex and Sandown Racecourse as these two venues have the highest incidence of rail moves in the state.

• Plastic Rail was installed as the inside rail at Caulfield and Flemington for the duration of the 2008 Spring Carnival. (Commencing with Underwood Stakes Day and Derby Day respectively).

December 2008
• Running Rail Upgrade and Roll-Out Plan Developed,
• Running Rail Policy
• Running Rail Standard

2009
• Tender strategy to deliver an appropriately suitable rail system for all racecourses in Victoria.
• MawSafe Rail system selected for the Victorian Running Rail Upgrade project
Global Barrier Systems be awarded the contract to supply the MawSafe Rail to RV & Metropolitan Clubs

**Plastic Rail Installed so far:**
- Ballarat
- Bendigo
- Caulfield
- Cranbourne
- Flemington
- Geelong
- Moe
- Mornington
- Sandown
- Swan Hill
- Warrnambool

**What about others:**
- Considering Other Solutions
  - Road Markers Event 2 & Picnic meetings
  - Portable plastic rail – is it feasible?
  - There may not be a solution for some!
AUSTRALIAN RACECOURSE MANAGERS
CONFERENCE 2010
The innovative approach
Presented by John Fargher
Managing Director
"Recycle dressing is the most cost effective method of rejuvenating tired, compacted surfaces that I have used. It provides aeration, de compaction and topdressing in one operation with only minimal surface disturbance. The results achieved are like no other operation, and they are sustained throughout the growing season. The improvement in infiltration, surface growth and resilience are testament to the effectiveness of this machine. Recycle dressing has become a integral part of Councils cultural maintenance on its sports fields, and results speak for themselves."

City of Ryde Council
Sports Facilities Maintenance Coordinator
Ritchie Griffiths

"Drainage had always been a problem for us in the past, since “Recycling Dressing” last spring the rainfall had during the off season would typically have caused puddling and unplayable conditions. These issues were not a problem once I had Sustainable Turf Renovations complete my renovation works."

WIN Stadium Warm Up Arena
Curator
Mick Barsby

"Best results in years. Highly Improved strike rate. We will undoubtedly be using this machine in all future seeding works."
Sydney University Sport & Fitness, Grounds Manager
Ray Hunt

"Best Germination rate ever. The field is looking as good as I have ever seen it. Will be using Sustainable Turf Renovations seeding services again next year. Extremely Happy with the results."
Mounties Sports Club, Grounds Supervisor
Paul Gill
Conducting Turf Trials by Andrew Peart  
(Australian Golf Course Superintendents Association)

Purpose of Presentation:  
- Give a brief overview of the value of conducting trials.  
- Trials that the AGCSA have been involved with.  
- Illustrating how racecourse managers may set up a trial within their own grounds.  
- Highlight a past trial undertaken within the racing industry.  
- Provide a brief overview of some current trials.

Value of Trials  
- Supporting evidence for claims made by others on the effectiveness of a product. Please show me the trial results.  
- Allows for the evaluation of products (effectiveness or otherwise), within your own environment, prior to using them on a broad scale application.  
- Being able to compare products in a ‘controlled’ environment to evaluate the best value for money.

AGCSA Trials  
- Been involved with many HAL industry funded trials inc. bentgrass trials, *Poa* control, salinity tolerance and effects of effluent water usage.  
- Undertook the most recent ANTEP trial for the evaluation of new perennial ryegrass and tall fescue varieties.  
- Undertaken trials into the value of soil amendments, wetting agents, fungicides and even investigating the effects of different portable turf protection systems.

Establishing Trials  
Generally the protocol into setting up a trial is essentially the same, and the following aspects are considered;  
- Uniformity of the site  
- Presence of reliable irrigation  
- The availability of the site  
- Ability for it to be well maintained  
- An appropriate site to test for the desired outcome  
- Required amount of area  
- The key to any scientific trial is to have replicated treatments.  
- A scientific trial is different from an observation trial, which is simply just that.  
- The replication allows for;  
  - allowance for variation within the site (edge effect)  
  - consistency of result  
  - ability to undertaken statistical analysis  
  - The trial must also have an untreated control and preferably an ‘industry standard’.  

On a racetrack, what might be some things that could be undertaken as a trial by the racecourse manager and his staff?
- Fertiliser trial (slow release vs. quick release)
- Product trial to evaluate reduction in soil salinity levels
- Wetting agent trial
- Maintaining specific surface hardness

**Trial Layout**
- What dimensions should the overall area be, a square layout or more a rectangular shape, or even linear.
- It is important that the trial area is ‘square’ – must use Pythagoras theory.

![Trial Layout Diagram]

**Collecting Data**

Depending on what is being assessed a rating is given to each plot.

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<th>18/7/08</th>
<th>25/7/08</th>
<th>1/8/08</th>
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</table>
Organising Data

Analysing Data

- Undertaking an Analysis of Variance (ANOVA) is the way to detect whether there is a significant difference between treatments.
- If the P value is greater than 0.05 there is no significant difference.

Interpreting the results

- Overall ranking for tall fescue varieties for turf grass density after two years. (ANTEP 2006)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yr 1 Ave</th>
<th>Yr 2 Ave</th>
<th>Overall</th>
<th>Ranking</th>
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<td>7.4</td>
<td>7.3</td>
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<tr>
<td>Bullseye</td>
<td>7.2</td>
<td>7.4</td>
<td>7.3</td>
<td>a</td>
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<td>7.3</td>
<td>7.2</td>
<td>a</td>
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<td>6.7</td>
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<td>b</td>
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</table>
Past Trials with the Industry

- Without doubt the most extensive trial undertaken in the racing industry was a three year trial following the reconstruction of Moonee Valley Racetrack which began in late 1994.
- The decision to re-construct the track using sand and mesh elements was only made after evaluation of test sections in 1991 and a 250m² area under racing conditions through the 1992.
- Prior to this reconstruction racetracks were historically constructed from fine textured soils which had many limitations:
  - The ideal racing surface was highly dependent on weather
  - Become very hard when dry & poorly drained and saturated when wet
  - Another issue is damp grass over compacted tracks – skating effect
  - Loss of return due to cancellations
  - High probability of a significant Poa annua population
  - Issues with the incorporation of agricultural drainage into the profile
- Sand provides the most desirable characteristics for a racetrack – high drainage rate, high porosity and a resistance to compaction.
- However, the perceived problem with sand constructions are that once a turf cover is lost they can become very unstable.
- However the use of the mesh elements into the sand provided improved stability.
- The trial was to serve as an intensive evaluation of the mesh element reinforced track.

- Soil Physical Characteristics
  - Bulk density
  - Volumetric Water
  - Aeration Porosity
- Soil Chemical Analysis and Plant Tissue Analysis
- Track Characteristics
  - Hardness
  - Infiltration
- Turfgrass Agronomy

Bulk Density Results from September 1995 – August 1997

<table>
<thead>
<tr>
<th>Location</th>
<th>Sampling Depth (cm)</th>
<th>Sampling 1</th>
<th>Sampling 2</th>
<th>Sampling 3</th>
<th>Sampling 4</th>
<th>Sampling 5</th>
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<tr>
<td>2m from inside rail</td>
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<tr>
<td>Main</td>
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Infiltration Rate Results from September 1995 – August 1997

Current Trials being undertaken
- In Nov. 2008 Evergreen Turf in conjunction with Mornington Racing Club installed a replicated trial to evaluate the benefits of StaLoK® fibres in conjunction with different turfgrass varieties and establishment methods.
- The aim was to evaluate the benefits of StaLoK fibres as well as understand the differences from different establishment methods.

Process
- Decide on number of treatments, trial area size and position within the B grass track
- Spray area out with glyphosate to kill existing grass cover.
- Mow low and blend remaining vegetation into the profile.
- Incorporate Stalok® fibres at 4kg/ton sand to 150mm with a Blecavator.
- Lay and sprig grass varieties

Trial Area

StaLoK® fibres
Completed Trial site
One Month after Establishment

Observations
- Kikuyu stolons were much faster to establish than the Grand Prix and at 6 weeks after planting the kikuyu had 60% cover compared to the GP at 20%.
- After 11 weeks the Grand Prix had been overrun by remnant kikuyu.
- While the kikuyu had 100% cover the density was rated an 8/10.
- During establishment the drainage rate of the sand was not compromised by the inclusion of the fibres.

Results - Wear

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<tr>
<td>Gr. Prix</td>
<td>1.7</td>
<td>1.0</td>
<td>2.0</td>
<td>1.7</td>
<td>1.0</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
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<td>0.5</td>
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<td>ns</td>
<td>ns</td>
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</table>
### Results - Root Length

<table>
<thead>
<tr>
<th>Treatment</th>
<th>20/11/08</th>
<th>8/12/08</th>
<th>23/12/08</th>
<th>23/1/09</th>
<th>19/2/09</th>
<th>31/3/09</th>
<th>1/5/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kik stolons</td>
<td>47</td>
<td>90</td>
<td>167</td>
<td>223</td>
<td>233</td>
<td>270</td>
<td>197</td>
</tr>
<tr>
<td>Kik washed</td>
<td>83</td>
<td>123</td>
<td>180</td>
<td>217</td>
<td>200</td>
<td>203</td>
<td>177</td>
</tr>
<tr>
<td>Kik sand</td>
<td>60</td>
<td>113</td>
<td>183</td>
<td>220</td>
<td>200</td>
<td>197</td>
<td>153</td>
</tr>
<tr>
<td>Blue/Rye</td>
<td>10</td>
<td>80</td>
<td>150</td>
<td>197</td>
<td>187</td>
<td>183</td>
<td>197</td>
</tr>
<tr>
<td>Gr. Prix</td>
<td>30</td>
<td>87</td>
<td>160</td>
<td>207</td>
<td>197</td>
<td>193</td>
<td>180</td>
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<tr>
<td>LSD p&lt;0.05</td>
<td>15.6</td>
<td>16.3</td>
<td>19.4</td>
<td>ns</td>
<td>23.1</td>
<td>44.2</td>
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### Results - Root Density

<table>
<thead>
<tr>
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<th>31/3/09</th>
</tr>
</thead>
<tbody>
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<td>Kik stolons</td>
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<tr>
<td>Kik washed</td>
<td>8.0</td>
</tr>
<tr>
<td>Kik sand</td>
<td>8.0</td>
</tr>
<tr>
<td>Blue/Rye</td>
<td>6.3</td>
</tr>
<tr>
<td>Gr. Prix</td>
<td>8.0</td>
</tr>
<tr>
<td>LSD p&lt;0.05</td>
<td>0.7</td>
</tr>
</tbody>
</table>

### Results - Thatch Dept

<table>
<thead>
<tr>
<th>Treatment</th>
<th>1/5/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kik stolons</td>
<td>15</td>
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<tr>
<td>Kik washed</td>
<td>25</td>
</tr>
<tr>
<td>Kik sand</td>
<td>25</td>
</tr>
<tr>
<td>Blue/Rye</td>
<td>10</td>
</tr>
<tr>
<td>Gr. Prix</td>
<td>20</td>
</tr>
<tr>
<td>LSD p&lt;0.05</td>
<td>10.0</td>
</tr>
</tbody>
</table>

### Results - Hardness

<table>
<thead>
<tr>
<th>Treatment</th>
<th>6/4/09</th>
<th>1/5/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kik stolons</td>
<td>80.0</td>
<td>80</td>
</tr>
<tr>
<td>Kik washed</td>
<td>63.3</td>
<td>83</td>
</tr>
<tr>
<td>Kik sand</td>
<td>70.0</td>
<td>90</td>
</tr>
<tr>
<td>Blue/Rye</td>
<td>76.7</td>
<td>80</td>
</tr>
<tr>
<td>Gr. Prix</td>
<td>73.3</td>
<td>90</td>
</tr>
<tr>
<td>LSD p&lt;0.05</td>
<td>ns</td>
<td>4.7</td>
</tr>
</tbody>
</table>
Geelong Racecourse

- Racing Victoria commissioned Evergreen Turf to undertake some in-situ trials at Geelong Racecourse to evaluate drought tolerant grasses in the Course Proper.
- Kikuyu and Grand Prix were two varieties chosen, with thatch either blended or removed.
- Three reinforcement fibres were also incorporated into the existing profile, plus plots with no reinforcement.
  - Stalok fibres
  - GSA Bloodstock fibres
  - RV fibres.
South Australian Track Redevelopments
by Jeremy Clapp (FMG Engineering)

Gawler Track History
- Horse racing began in Gawler in the 1840’s
- The Club was formed in 1871
- Current site purchased in 1901
- Racing was originally clockwise but later changed to counterclockwise
- 60’s-90’s hosted 3 day event annually and held World Equestrian Event in 1986
- Late 90’s club was earmarked for closure
- Melbourne Cup Winners Gallilee and Gold & Black are buried on site

Previous Considerations
- Original track shape poor
- Options to realign home turn (partial reconstruction)
- TRSA considered alternate site in early 00’s
- Kudla site
- Opportunity to work with Council for Stormwater detention
- Club (members) did not want to relocate

Why redevelop the site
- ASPM Morphettville only metro track
- Northern area growth (context of 30yr plan)
- Opportunity in Gawler for multi purpose function centre
- Improved facilities

How track construction came together
- TRSA negotiated funding from State Government ($6M)
- Realisation of development block southern end of site ($7.5M planned)
- Consideration given to artificial track surface for course proper
- Numerous layouts (track widths, shapes and chute options) considered and budget costed
- Ultimately decided to retain turf course proper with turf and sand training tracks

Constraints
- Odd shaped site
- Sale of development block on southern end
- Have to maintain 10m clearance to eastern side for future road widening acquisition
- Council storm water easement and flooding on Adelaide Road
- Existing significant trees
- Existing irrigation tanks

The team project
• Client
  ➢ Gawler & Barossa Jockey Club
  ➢ Thoroughbred SA
• Racetrack Construction
  ➢ Design and Construction Management - FMG Engineering
  ➢ Contractor - McMahons
  ➢ Growing medium - Sloans
  ➢ Turf - ANCO
• Project Management
  ➢ Planning and Function Centre - Connor Holmes
  ➢ Building design - Bruce Roache Design
  ➢ Civil and Structural design - FMG Engineering
  ➢ Contractor - Gawler Carpenters and Joiners

Track Data
• Length 1,840m
• Width 20m
• Main straight 300m
• 1500 and 1700m chutes
• Training tracks 1500m long
• Turf training 10m wide, sand training 6m wide
• All tracks fully irrigated
• 65mm dia subsurface drainage half herringbone at 4m centres
• 270mm growing medium
• 1.5% camber on straights
• 4% camber home turn
• 3% camber on other turns

Construction Information
• Staged construction to enable training to continue
• Borrow pit for fill materials located to allow for future use as detention basin
• 27,000m³ fill from borrow pit and swales
• 35,000 tonnes of imported growing medium (270mm thick)
• 63,000m² turf
• Toro irrigation (designed by Hydroplan) including new pump station
• 4 new stewards towers - 1 x 9m, 3 x 6m
• 10,000m of new running rail
• Dorian section timing system installed (200m centres)
• New parade ring adjacent to jockey building
• New maintenance shed and barrier shed
• Extensive landscaping

Technical Data
- Adopted similar design principles from ASPM due to late change from synthetic to turf track
- Subgrade compaction 90-95% Standard compaction
- USGA theory researched for drainage and growing medium
- Specific requirements for growing medium and drainage sand

**Growing Medium**
- Laboratory measured compacted saturated hydraulic conductivity greater than 100 mm/hr at 16 drops and greater than 30 at 32 drops (at a compacted bulk density of about 1.6).
- Water-holding capacity at field capacity saturation level to be greater than 12%.
- Most of the sand particles shall be quartz with no more than 5% of the total to be soluble in acid (i.e. lime/dolomite).
- Grain shape: The optimum shape for the majority of the sand grains is “slightly rounded angular”. The percentage of such grains is to be greater than 50%. (Highly angular sands generally pack to give undesirably low hydraulic conductivities; they also distort grass roots and hence weaken grass growth. Highly rounded grains lack traction)
- Sodicity: The percentage of exchangeable sodium is to be minimised through the inclusion of gypsum in the final mixture before installation, such that its percentage will be reduced to less than 6% following early leaching after installation. The exchangeable cations calcium, magnesium, potassium and sodium will then have proportions of approximately:
  - Calcium > 70%
  - Magnesium 10-15%
  - Potassium > 2% (not critical)
  - Sodium < 6%

**Growing Medium Grading**

<table>
<thead>
<tr>
<th>Particle Name</th>
<th>Particle size (mm)</th>
<th>Percentage by Weight</th>
<th>Percentage by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel and stones</td>
<td>&gt;3.4</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Gravel</td>
<td>2-3.4</td>
<td>&lt;4</td>
<td>&lt;4</td>
</tr>
<tr>
<td>Very coarse sand</td>
<td>1-2</td>
<td>&lt;7</td>
<td>&lt;7</td>
</tr>
<tr>
<td>Coarse sand</td>
<td>0.5-1</td>
<td>&lt;10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Medium sand</td>
<td>0.25-0.5</td>
<td>-</td>
<td>&gt; 65</td>
</tr>
<tr>
<td>Fine sand</td>
<td>0.1-0.25</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Very fine sand</td>
<td>0.05-0.1</td>
<td>&lt;7</td>
<td>&lt;7</td>
</tr>
<tr>
<td>Silt</td>
<td>0.05-0.002</td>
<td>&lt;4</td>
<td>&lt;8</td>
</tr>
<tr>
<td>Clay</td>
<td>&lt;0.002</td>
<td>2-5</td>
<td></td>
</tr>
</tbody>
</table>

**Construction Issues**
- Inclement weather (wet, dust)
- 33 days of EOT’s + Christmas break
- Interfacing with Function Centre
- Subgrade soft spots (start of home straight)
• Proximity to track
• Multi purpose
• Judge and camera tower mounted on top of building
• Interface function centre access and training (boom gate control)
Evergreen Turf
VIC and NSW
Peter Manning
Race Course Managers Meeting

Racing Services

StaLok Reinforcement Systems

More Than Just Turf
Racing Services

StaLok™ Divot Repair

More Than Just Turf

Racing Services

StaLok™ Gold

(Sand Tracks)

More Than Just Turf
Racing Services

Consultancy & Trial Work

More Than Just Turf
Harvest Process
Freight
Laying
Breakfast on the Bridge
The Final Roll
Major Companies that Contributed

Dad and Daves Turf
Evergreen Turf (NSW)
Hi Quality Turf
J & B Buffalo

Mirror Development
All Gold Labour
Flemming Golf
Toro Delegates

Pat O’Shannessy
*National Manager - Large Turf Irrigation*

Paul Prout
*NSW Sales Manager – Commercial Grounds*

Michael Lenehan
*NSW Territory Manager – Irrigation*

Paul Masterson
*NSW Territory Manager – Irrigation*
Sprinklers

- 690 Only option 28 - 32m range
- 835/855 – 15 - 29m, unmatched flexibility
- DT – 15 – 29m, huge nozzleing choices
- A model for all applications

TG 101

- TG 101 Large Radius Sprinkler
- Throws to 50m plus radius
- Shutes and other wider areas
- Partnership with leading gun sprinkler maker - Komet
TS 90

• Trajectory Adjustment from 7° to 30°
• Part-And Full-Circle In One
• Back Nozzle Capable
• Ratcheting Riser
• Three Nozzle Configuration
• Constant-Velocity Drive
• Throws up to 28m

Aerators – Aqua control

• Surface or fountain models
• ½ HP to 7.5HP
• Nozzle Configurations
• Controller,Pigtails
• 300 Watt light sets
• Only C-Tick product available
Sensor Technology

- Precision Sense
  Mobile monitoring unit

- Turf Guard
  Fixed on line radio

Assessing site conditions for precision management

- Soil moisture (TDR)
- Soil compaction (penetrometer)
- Turf quality (reflectance sensor)
- Topographic relief (GPS elevation)
The Turf Guard System

- Senses Moisture, Temperature and Salinity
- Wireless communication
- Web enabled software
- Easy to understand graphs
- Quick installation
- Operates on 900MHz Band Plan – no additional licence required

Sensor Installation

- Moisture, Salinity, Temperature
- Dual Level readings
  - 1. Critical root level. (no less than 20mm below surface)
  - 2. Soil bed 11cm below Level 1
- 152m buried range (line of sight)
- 3 year battery life
- Real-time data reported up to every 5 minutes.
- Automatically joins course network
- Replaceable battery
- Installs in minutes
Toro Equipment

Wide area mowers

Vehicles

Zero turn mowers

Deep tine aerator

Topdressers
Plastic Running Rail

- Update and latest research and development
- Benefits and problems
- Competition. Better product better price.
Manufacturers
• Duralock
• Fornells
• Barriers International
• Global Barriers Systems (Mawsafe)
• Steriline

REASONING FOR PLASTIC

• Jockey safety
• Horse safety
• Stability
• Visual impact
• Ergonomic benefit
2 Years on

• Very few incidents

• 1 serious fall at Flemington,
• Geelong/Caulfield

**Latest improvements**

- Shorter anchor
- True position sleeves
Financial Impact

- Costs per move at Caulfield/Sandown:
  - Mawsafe rail $1240
  - Alluminium $2950

 22 moves pa
SAVING $37,600 pa Caulfield, Sandown $70K

Time Saving

- Aluminium  128 man hours per rail move
- Mawsafe Rail  45 man hours per rail move

Saving pa; Caulfield 1700 man hours pa
  Sandown  2700 man hours pa
Moveable Chute Rails

- 6 metre section (150m+)
- Towable

Time and labor race day savings
Staff wellbeing

• 53% reduction in soft tissue injuries
• 34% reduction in injury leave.

• Sledge hammers have become obsolete.
Issues

- UV exposure
- Wind
- Marking of track from anchors
- Cost: Approx. $80,000

Summary
In every way shape and form, plastic rail is a superior product than its aluminium counterpart, both in the safety aspects for jockeys and horses and portability and ease of use for racecourse managers and their staff. (In my opinion)
2005

There were a number of incidents that led to RV’s decision to investigate plastic rail e.g.

- Jockey P. Saunders fall at Werribee in 2005
- Jockey C. Payne fall at Kyneton in the same year.

and many other examples of serious injuries to riders

Rider loses leg after race fall

September 22, 2003

South Australian jockey Cheree Buchiw has had a leg amputated below the knee following a horrific fall in the last event at Cheltenham on Saturday.

AAP
Some Examples

2006

- RV Board along with the VJA commissioned a report to review running rail safety.
  - Review video patrol footage of running rail incidents to identify the most common impact scenarios
  - Materials testing of rail components including the rail, post and footings
  - Development of computer models simulating common impact scenarios – DV Experts
  - Recommendations for ideal rail characteristics and testing regimen
2006

Key findings of the report

That railing systems that stay together during impact (continuous rail designs) are in general, much safer than frangible rail systems but that all post designs studied were found wanting in terms of potential for head and neck injury in direct impact scenarios.

2006

Key findings of the report

The favourable approach is to fix the footing and provide ‘give’ in the railing with a plastic post of determinable and consistent force deflection characteristics.
2006

- **Recommended Actions & Timing from the Report**
  - Oct 2006, Provide feedback to running rail manufacturers to encourage innovation of new or existing products
  - Nov 2006, Communicate findings to RV, National Jockey Safety Review, Chairmen of Stewards, ARB and Media
  - Dec 2006, Establish Crash Testing Facility at CTC
  - Feb 2007, Refine the draft Safety Evaluation Framework proposed in the report with a view to approving and publishing a safety evaluation framework and accreditation process for manufacturers
  - Ongoing, RV explore, develop and test alternatives to traditional rail designs, eg, track guides used in harness racing
  - Determine which products meet the industry’s standards or require further development to meet Australian conditions
  - March 2007, Present plan to RV Board & VJA to improve the safety of running rails in Victoria

2007

- A new running rail design was identified
- The new rail design features a unique footing

Mawsafe Rail
2007

- January 2007, the use of plastic rails was approved for the Geelong ThoroughTrack.
- Fornell’s was selected to provide the rail for Geelong.

2008

- Dan Mawby’s design for a moveable ground anchor outperformed other designs.
- In demonstrations to Melbourne metropolitan track managers this was the preferred method for anchoring the running rail.
2008

- May 2008 installed at Cranbourne Training Complex and Sandown Racecourse as these two venues have the highest incidence of rail moves in the state.

2008

- Plastic Rail was installed as the inside rail at Caulfield and Flemington for the duration of the 2008 Spring Carnival. (commencing with Underwood Stakes Day and Derby Day respectively).
December 2008

- Running Rail Upgrade and Roll-Out Plan Developed,
- Running Rail Policy
- Running Rail Standard

2009

- Tender strategy to deliver an appropriately suitable rail system for all racecourses in Victoria.
- Global Barrier Systems be awarded the contract to supply the MawSafe Rail to RV & Metropolitan Clubs
- MawSafe Rail system selected for the Victorian Running Rail Upgrade project
Plastic Rail Installed so far

- Ballarat
- Bendigo
- Caulfield
- Cranbourne
- Flemington
- Geelong
- Moe
- Mornington
- Sandown
- Swan Hill
- Warrnambool

What about the others?

- Considering Other Solutions
  - Road Markers Event 2 & Picnic meetings
  - Portable plastic rail – is it feasible?
  - There may not be a solution for some!
10100 HD+
(Heavy Duty + Co-Extrusion)

⭐⭐⭐⭐
Safety

20 Year
Warranty

Background

- Equipping the world of horse racing for over 40 years
- Fornells pioneered safe race rails in the early '70's
- The only fully integrated maker of uPVC running rails with R&D, manufacturing and service operations out of Paris, Cologne and Melbourne
- Installed in most of the major racing jurisdictions throughout the world (France, UK, Germany, South Africa, Middle East, Korea, South East Asia, Australia)
- Renowned for our high quality products and ability to respond to customer needs with new designs and innovations, registering new patents every year
- Fornells has 90 years of experience in high performance barriers and boundaries (company founded in 1919)
History in Australia

2005 – supplied rail to Cranbourne Training Complex for trialling
2006 – supplied product for RVL’s investigation into running rail safety
   (Fornells was the only rail that could not be broken in testing)
2007 – Fornells 10100 rail chosen for Geelong Synthetic Track
2007 – Fornells advised RVL on the design of the RVL rail (Mawsafe)
   including setting the final profile dimensions for extrusion
2008 – Fornells contracted to manufacture the extrusion tooling and
   first 5,000m of RVL rail installed at Caulfield and Flemington
2009 – secured exclusive license over Ray Borg’s patented kick-out
   safety post design (Ray Borg is the Cranbourne horse trainer
   who invented the kick out safety post in 2001)
2010 – Introduced the first co-extruded running rail specifically for the
   Aust and NZ markets (Fornells have 10 years experience in
   manufacturing co-extruded profiles for outdoor applications)
Why Fornells?

- Quick and easy to move
- Strongest rail on the market
- ★★★★★ Safety
- Co-extruded rail & 20 year warranty
- Product range
- IP

Quick & Easy to Move

- Single handed installation and removal
- Move 300 - 400m per hour with existing staff
Strength is critical

- pull over capability exceeds 300kg in fixed footing
- exceeds 150kg in ground

3mm wall thickness on Heavy Duty Rail

Safety

Fornells 10100 HD+ meets performance standards in all jurisdictions and is the first rail to be awarded a 4 STAR safety rating by Aust. safety engineers – DVExperts

- Meets stricter European pull over test standard
- “Rapra” Impact Test - British Horseracing Auth.
- Q panel UV testing
- Chest and Head impact tests – Autoliv Australia
**Product Life**

- “I don’t want to be paying twice as much, twice as often!”
- The only way to truly protect PVC from UV radiation is NOT to expose it.
- Co-extrusion puts a protective skin over the PVC that cuts out the UV radiation.
- It’s not how your rail performs on day one that counts – it’s how it performs in year 20!

---

**Total Racecourse Solution**

- Fornells is not a “one product company”
- It’s a complete system of integrated products
- Horse areas:
  - Inside/outside rails for racecourse and training tracks
  - Mounting yards and walkways
  - Gates and access ways
- Public areas:
  - Securely fenced walkways
  - Viewing areas that merge with horse areas
- Products to suit both High and Low risk situations
Value for Money

- Longest product life/replacement cycle in the industry
- Patented co-extrusion technology – exclusive to Fornells
- 20 year warranty on co-extruded components
- Minimise capex by matching products to the assessed risk

IP

- Product range supported by a number of patents and licensed technology including:
  - Fornells Joiner Patent
  - Fornells Co-extrusion Patent
  - Ray Borg’s 2001 Safety Rail and Post Patent
  - Fornells Collapsible Safety Post Patent
- Fornells patents cover:
  - Safety post design
  - Rail joiner system
  - Co-extrusion process
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>FORNELLS 10100 HD+</th>
<th>Product B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jockey Impact Test</td>
<td>★★★★</td>
<td></td>
</tr>
<tr>
<td>RAPRA Impact Test – UK</td>
<td>✓</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>20 Year Limited Warranty</td>
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<tr>
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</tr>
<tr>
<td>3mm Outside Wall</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Easy Move Footings</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Quick Release Joins</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Heavy Metal Free PVC Compound</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Introduction

- Queensland Racing received a grant of $12 m to build three synthetic tracks.
- It was decided to install at Caloundra to replace the existing Sand Track which had been always registered as a Race Track.
- Sand had deteriorated and required major repairs.
Construction

• Opportunity to provide improvements to existing facilities.
• 7 months to construct.
• Track Specifications-
  1760 m Circumference
  18 m Wide
Equipment and Maintenance
Challenges
Synthetic Racing
Acton Track

James Cataldo

Reason For Choice
- The Club did extensive research over time into what surface they would use
- The club spent $2.4 million installing the track in 2004 – this cost includes the installation of lights for training
Reason For Choice

- The track was built with concrete mowing stripes to hold material in a base of crushed rock and aggie pipes, spaced at 2 and 8 metre positions. Additional drains have since been added at the 3 and 6 metre positions.
- The club had tested many tracks around Australia and liked the Thorough Track surface the most

Reason For Choice

- It has well and truly paid off as the track has been used for training for the past 6 years and racing for the past 4 years
Costs

Yearly
- Wages for maintenance – 1 staff member per day (2-3 hours)
- Running of machinery to maintain it

Costs

Every 2-3 Years
- Adding wax to the track at a cost of approximately $60,000
- To date there has been no need to top up the synthetic material
Maintenance

Daily

- Removal of horse manure
- Roll track
- Place witches hats out

Maintenance

Fortnightly

- Once a fortnight the track requires a full renovation
- This involves using the power harrows, the power rake and then the broom under the rail
- Every other fortnight requires a minor renovation
- This uses the Harley power rake only
Performance

- Approximately 140 horses train on this surface every day, 6 days a week
- Race meetings are run on the Thorough Track during the winter months

Training Pros

- Easy to maintain
- Trainers enjoy the surface
- Not as taxing on horses as grass surface
- Jump outs every Wednesday – 6 horses per heat, up to four heats per week
- Knowing that you have a consistent and reliable surface, even after a night of steady rain
Training Cons

- From my experience, none

Performance

- To date, never had to cancel a race meeting
- The cooler the weather, the better the performance of the track (best race meetings generally have a frost that morning)
Racing Pros

- Trainers know that they are going to have a good surface to run on during the winter months
- No need to move rail
- No watering or fertilising
Racing Cons

- Can only have a field of 12 horses for every race
The Impact of Racing Surfaces on the Equine

Andrew F. Clarke
BVSc (Hons) PhD

ARMA Canberra August 2010

Overview

• “Surface Wars”
• Track record of track surfaces
• Incidence and types of injuries
• Australian perspective
• All-weather EPT Turf Track

Andrew F. Clarke
Equine Connections
Background

- Increasing societal and litigious pressures to improve horse and jockey safety
- Every time a horse falls a jockey is at risk
- Causal and modifiable risk factors

Safety 1989 to 2004 Victoria

All Race Types
514 fatalities, 743,552 starts

Flat Races
316 fatalities, 719,695 starts
0.44 fatalities per 1000 starts

Jump Races
198 fatalities, 23,857 starts
8.30 fatalities per 1000 starts

Boden et al. 2006
Safety: Comparative results

- Victoria, Australia .44 fatalities per 1000 starters  Boden et al 2006  “International Benchmark”

- United Kingdom .9 fatalities per 1000 starters  Parkin et al 2004


- One study that showed turf racing to be less safe than non-turf racing  Hernandez et al 2001

Safety: Comparative results

- Quality of turf “cow grass grown on a layer of fine sand which was, in turn, on top of yellow earth” injury rates decreased by a third when replaced Engineered Profile Turf (EPT) track  (Tan and Stewart, 2000)

- Track condition a significant risk factor of fatality or injury of racehorses during races  
“turf courses are inherently safer than dirt or all weather tracks” (Parkin et al 2004)

- The risk of fatal injury on turf c.f. all-weather racing
- Different pattern of fractures
- Biaxial sesamoid fractures 9.89 times
- “that the all-weather courses in the UK have become less safe”

Andrew F. Clarke  
Equine Connections

Safety: Turf vs Non-Turf

- Hong Kong fatalities on turf half of synthetic
- New York 2.1 fatalities per 1000 starters on dirt and 1.1 per 1000 on turf (Hill et al 1986)
- California 19/111 hindlimb fatalities on synthetic cf 1/65 dirt (Hinde 2009)
- Front leg and sesamoid fractures most common (Hinde 2009)

Andrew F. Clarke  
Equine Connections
Safety: Synthetic vs Dirt

- 1.4 fatalities per 1,000 starts for synthetic surfaces
- 2.03 fatalities per 1,000 starters for dirt

- Honeymoon effect: long term performance

- *Santa Anita Surface under the microscope*
- *Fatal Injuries at Turfway being probed*
- *Training to resume at Golden Gates Field*
- *Turfway to continue probe of Polytrack*
- *Thorough mess at Geelong Racecourse*

Andrew F. Clarke
Equine Connections

Safety: Turf vs Dirt vs Synthetic

<table>
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<th>Surface</th>
<th>All</th>
<th>Turf</th>
<th>Dirt</th>
<th>Synthetic</th>
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<tbody>
<tr>
<td>Incidence</td>
<td>2.04</td>
<td>1.78</td>
<td>2.14</td>
<td>1.78</td>
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<table>
<thead>
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<th>Turf Firm</th>
<th>Good</th>
<th>Yielding</th>
<th>Soft</th>
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<tbody>
<tr>
<td>Incidence</td>
<td>1.99</td>
<td>1.37</td>
<td>0.54</td>
</tr>
</tbody>
</table>

- *Parkin 2010 Equine Injury Database Nov 2008-Oct 2009*
Safety: Turf vs Dirt vs Synthetic

- In USA 1.47 fatalities per 1,000 starters for synthetic surfaces and 2.03 fatalities per 1,000 starters for dirt

- In USA the move from dirt to synthetic improves safety

- In Australia 0.44 fatalities per 1,000 starters on turf and 2.0 fatalities on synthetic surface

- In Australia the move from turf to synthetic surface decreases safety

Andrew F. Clarke  Equine Connections

Safety

- A policy to 20% of racing to be transferred from turf to synthetic surfaces (@ 1.4 fatalities per 1000)

- 316 fatalities from 719,695 starters

- Overall rise to 455 fatalities

- An increase of 139 fatalities

- 44% overall increase in flat racing fatalities

Andrew F. Clarke  Equine Connections
Safety

- A policy to 20% of racing to be transferred from turf to synthetic surfaces (@2.0 fatalities per 1000)

- 316 fatalities from 719,695 starters

- Overall rise to 541 fatalities

- An increase of 255 fatalities

- 71.2% overall increase in flat racing fatalities

---

All Weather Turf (EPT)

Moonee Valley Racetrack

Kranji Racetrack, Singapore

Happy Valley Racetrack

Sha Tin Racetrack

Andrew F. Clarke
Equine Connections
Engineered Profile Turf (EPT)

EPT Performance Criteria

- Drainage
- Resilience
- Root zone moisture content
- Divoting
- Passage of heavy vehicles
EPT: Horse Impacts

**Flat Races (Victoria)**

0.44 fatalities per 1000 starts

“International Industry Benchmark”

**EPT Track 10/06-12/08**

0.29 fatalities per 1000 starts

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Equine Connections

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**EPT: Horse Impacts**

**Veterinary Certificates per 1000 Starters**

Racing Victoria Veterinarians diagnose a post-race lameness requiring a Certified Veterinary Examination before horse starts again

**Traditional Turf 10/07-12/08**

11.9 cases of lameness per 1000 starters

**EPT Track 10/07-12/08**

7.1 cases of lameness per 1000 starters

---

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EPT Longevity

- Drainage: Deteriorates as roots compact
- The EPT track at Moonee Valley is 15 years of age and Hong Kong track which is now 21 years of age
- Life expectancy of the Moonee Valley 30 years compared to 7 to 15 years for conventional turf tracks

EPT: Longevity

- Drainage deteriorates as the root zone compacts
- Breakdown of the foundation of the track
- Compaction due to heavy vehicles
Durability: Reflex Mesh Elements

- Growing medium resilient hardwearing turf surface
- Drainage that allows for the provision of optimal racing surfaces in the widest range of weather conditions (perched water table)
- Kranji: up to 65 all turf meetings per year

Consistency

“Ratings farce a fast track to trouble”

- Variations in compaction and drainage rates
- Construction and ageing (root compaction)
- Inconsistencies that are difficult if not impossible for the most experienced track managers to address
- Objective track monitoring systems which are now available can be used to confirm whether variations in compaction and drainage rates are caused by construction/ageing factors
Conclusion

- Objective measures performance
- Racing surface can definitely impact the safety of the horse and rider
- Lower incidence and different pattern of injuries on turf compared with non turf tracks
- Turf can offer a true all-weather performance.

Thank you

- Please visit Living Legends in Melbourne
  www.livinglegends.org.au
- More information
  aclarke@equineconnections.com.au
Barriers International

- Established 25 years
- Design and manufacturer of PVC products for the horse and sporting industries
- Specialist in running rail
- World Market Leader

Crystal Palace England
Crowd Barriers

St Brieuc France

Double Rail

Doncaster England
Premier Race Rail

Newmarket England

Premier Race Rail

- No steel above ground
- Rail remains intact on impact
- Unique formula
  - Virgin PVC (no multi layer)
  - No regrind or recycled materials

Godolphin Paddocks England
Premier Race Rail

- Over 20 years of rail placement
- Proven not to deteriorate
- Installed at over 100 racecourses worldwide
- Does not crack or become brittle

Lion d'Angers France

Safety Record

- No death or serious injury to horse or jockey
- Independent/Internal testing
- BJC accredited
- 3 Star rating
Evolution of rail

- Markers
- Hedges
- Metal U Shape
- Standard European
- Break Away “collapsible”
- UK Standard V’s 3 Star

Breakaway System

Design One: Post fuse with 3 star test rating.
Rail Selection

3 KEY POINTS
- Functionality
- Material
- Price

Ascot England
Australian Racecourse Managers Association

Canberra 2010

David Phelps

- History of Wrightson Seeds
- Introducing SUNGRAZER T ryegrass
- Questions
History of Wrightson Seeds

- Company is over 70 years old in Australia
- Corporate headquarters in NZ
- Head office in Melbourne, with seed depots in Brisbane, Armidale, Orange, Albury and Mt Gambier
- Strong overseas links (genetic & breeding material)
- Strong R & D base
Sungrazer T Ryegrass

- FEATURES
  - Early maturing annual
  - Transitions out in spring to allow Kikuyu to re-establish
  - Tetraploid
    - Larger seed
      - Improved seedling vigour
      - Easily established by over-sowing
      - Strong early root growth
    - Large, dark green leaf
  - Strong winter & early spring growth
  - Proprietary seed (certified quality)
What is ploidy?

- Chromosomes - genetic material of living organisms
- Diploid - 2 of every chromosome (14 chromosomes per cell)
- Tetraploid - 4 of every chromosome (28 chromosomes per cell)
  - increased cell size compared to diploid

Diploid vs Tetraploid cells

Tetraploidy increases size of cells
Tetraploid ryegrass - history

- Do occur naturally
- Can be produced artificially
  - colchicine chemical treatment
- USA work
  - first achieved artificially in USA in 1939
  - Aim to increase winter activity --> increase DM yields
  - few agronomic benefits achieved
- European work
  - revisited tetraploids in 1960’s
  - failed to persist in perennial ryegrass under grazing
  - absence of endophyte
Tetraploid ryegrass - history

- Annuals better accepted
  - Increased yields
  - improved seedling vigour
  - persistence not an issue
- Early examples
  - Tetila and Tama “westerwold” annuals
  - Moata italian
- Australasian work (1980’s)
  - Quartet first persistent Australasian bred perennial ryegrass cultivar released 1998
  - late flowering, contains endophyte
  - good agronomics and good animal performance

Sungrazer T Ryegrass

- FEATURES
  - Early maturing annual
    - Transitions out in spring to allow Kikuyu to reestablish
  - Tetraploid
    - Larger seed
      - Improved seedling vigour
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    - Proprietary seed (certified quality)
28days

Sungrazer T Ryegrass

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      - Strong early root growth
  - Large, dark green leaf
  - Strong winter & early spring growth
  - Proprietary seed (quality)
Further Contacts & Information

• Andrew Brooker
  – 0409 351834
  – 1800DURATURF
As well as providing our high quality PVC formula for use in Global Barrier Rail Systems, Polvin fencing has a range of fencing styles suitable for.......
Stable Yards

Paddocks
Temporary Fencing used for barriers at events

Polvin has developed a formula to ensure its enduring quality and make it the best PVC fence available in the world.
These formulations have been designed specifically to cope with the harshest environments.

- Independent tests show that our impact strength is more than 3 times better than the industry standard.

And will not discolor.
• All Our fencing is mono – extruded, which means we use the same high quality material all the way through, unlike some who try to save money by using an inferior material for the inside and only a very thin layer of better material for the outside.
• Any scratches or thin spots can expose the inferior inside layer, leading to failure.
<table>
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<th>Field</th>
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<tr>
<td>18</td>
<td>Review</td>
<td>900</td>
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</tr>
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</table>
RACE 1 - 900 M Sprint - Initial Environmental Review

RACE TIP: Over this race you will assess your current environmental management practices.

A short sharp 900 metres sprint to evaluate your current program of environmental management and identify your specific needs. At the completion of this race your current environmental management position will be known. You will then be able to report your current environmental status to management.

An initial environmental review (IER) is a requirement of the ISO 14001 standard for Environmental Management Systems. However, e-par recommends an IER as useful for determining:

- The environmental aspects and impacts associated with your operations;
- Your current environmental status; and
- The strengths and weaknesses of your current environmental management programs.

The horses are at the gate and ready to jump. When you are ready click on the Track to progress.

FORM GUIDE

Is there a format for the conduct of the environmental review? Yes there is with e-par®. We provide an initial Environmental Review template document (See the links below).

Tip: Remember to complete and save this document.

SAVE ALL EPAR DOCUMENTS TO YOUR OWN COMPUTER BY CREATING A FOLDER FOR YOUR EMS. This will provide you with your back-up. Then later on you can upload your e-par documents onto the e-par server using the IRT EMS upload tool.

You can print a copy and complete it or complete it on line.

NOTE: A completed IER is provided in the Winners Circle as an example.

The Initial Environmental Review is a guide for you to conduct the initial Environmental Review by incorporating any of the activities you may identify as sites specific to your facility.
RACE 1- Initial Environmental Review

At the 400 metre mark - time to report your findings to management

Initial Environmental Review Report Template
00-Nov-2005 11:31:00 Number of downloads: 11

Tips: Be sure to save it and print it.

<< back  next >>

RACE 1- Initial Environmental Review

At the finishing post - What to do with the Initial Environmental Review Report?

Print two copies. Place one in your e-par® Folder and ensure senior management receive the other with your Initial Environmental Review attached.

You have assessed and now reported on your current environmental status. You are in a good position to develop and implement your e-par® environmental management system. Good luck as prepare for race 2 and develop your Environmental Policy statement.
What is an Environmental Policy and what does it look like?

An environmental policy is defined as: "The overall intentions and direction of an organisation related to its environmental performance as formally expressed by top management."

An example is provided below. Click on the link to open the example, print the document and then prepare for some work at the 1200 metre mark.

You will need guidance to help you identify your proposed objectives and targets.

What can be used?

In Race 3 you conducted a risk assessment and recorded that information on an aspects and impacts worksheet.

Retrieve a hardcopy of your e-par Worksheet from your environmental management folder that you completed in Race 3.

This will help you conform your environmental objectives and targets based on risk assessment.
### Standard Operating Procedures

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<th>SOP</th>
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<td>Visual Inspection Above Ground Fuel Tanks Template</td>
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www.epartee.com
NEW CHEMICAL MODULE

- automates the compliance and assurance process to reduce the record-keeping burden;

- automates chemical risk assessments;

- provides continually updated product information for all chemicals and animal health products.
Major Features

- **Recording and Tracking of Chemicals**
  - Recording and tracking of stored chemicals and dangerous goods to meet environmental and occupational health and safety (OH&S) requirements

- **Env and OH&S**
  - Automated creation risk assessments, placards, labels for decontamination and chemical segregation data

- **Recording of Pesticides Treatments**
  - Detailed recording of pesticide treatments
  - Mapping of treated areas and no-spray or no-go zones
  - Email capability to notify neighbours

- **Problem Solver**
  - Problem-solving functionality to locate the most suitable pesticide solutions based on comprehensive and up-to-date information
  - Notification of changes to product registration

- **Chemical Information Resource**
  - Source of the most current information on all MSDS and labels

- **Emergency Services Interface**
  - Provision of relevant information to emergency services in the event of emergencies involving chemical storage areas which are automatically mapped

- **Reporting**
  - Reporting and data management of inventory and budgets

---

** REGISTER NOW **

[Link to register](terry@epar.com.au)

[Contact information](02 49 614060)
ARMA Archives

Racecourse Managers Awards

1999 - Lindsay Davies - “Racecourse Manager of the Year”
2000 - Geoff Fanning - “Racecourse Manager of the Year”
2001 - Ian Trevethan - “Racecourse Manager of the Year”
2002 - Warren Williams - “Racecourse Manager of the Year”
   & “Outstanding Achievement – Metropolitan Racecourse”
   - Murray Weeding - “Outstanding Achievement – Provincial Racecourse”
2003 - Norm James - “Racecourse Manager of the Year”
   & “Outstanding Achievement – Metropolitan Racecourse”
   - Charlie Stebbing - “Outstanding Achievement – Provincial Racecourse”
2004 - David Patrick - “Racecourse Manager of the Year”
   - Geoff Murphy - “Outstanding Achievement – Metropolitan Racecourse”
   - Scott Olson - “Outstanding Achievement – Provincial Racecourse”
2005 - Lindsay Murphy - “Racecourse Manager of the Year”
   & “Regional Award – New South Wales/ACT”
   - Graeme Green - “Regional Award – Queensland”
   - Bernard Hopkins - “Regional Award – Southern Australia”
   - Geoff Murphy - “Regional Award – Central/Western Australia”
2006 - Geoff Murphy - “Racecourse Manager of the Year”
   & “Regional Award – Central/Western Australia”
   - Graeme Green - “Regional Award – Queensland”
   - Scott Olson - “Regional Award – New South Wales/ACT”
   - Jason Kerr - “Regional Award – Southern Australia”
2007 - Michael Suey - “Racecourse Manager of the Year”
   - Martin Synan - “Outstanding Achievement – Metropolitan Racecourse”
   - Shannon Caddy - “Outstanding Achievement – Provincial Racecourse”
2008 - Geoff Murphy - “Racecourse Manager of the Year”
   - Terry Watson - “Significant Contribution – Metropolitan Racecourse”
   - Scott Olson - “Significant Contribution – Regional Racecourse”
2009 - Warren Williams - “Racecourse Manager of the Year”
   - John Tonani - “Significant Contribution – Metropolitan Racecourse”
   - Murray Weeding - “Significant Contribution – Regional Racecourse”
2010 - Tim Bailey - “Racecourse Manager of the Year”
   - Bill Shuck - “Significant Contribution – Metropolitan Racecourse”
   - Mark Hark - “Significant Contribution – Regional Racecourse”

ARMA Honorary Members

2008 - Lindsay Davies (1976 – 2003; Western Australian Turf Club, Sydney Turf Club)
2009 – Arthur Stubbs (Primary Tasks and ARMA Secretary)
ARMA Committee History

2000 (Advisory Conference Committee)
Warren Williams – Qld; Lindsay Davies – NSW; David Woods – SA; David Lowe – Tas; Martin Breen – Vic; Geoff Murphy - WA

2001(Advisory Conference Committee)
Warren Williams – Qld; Lindsay Davies – NSW; John Tonani/Bart Cowan – SA; David Lowe – Tas; Martin Breen – Vic; Geoff Murphy - WA

2002 (Racecourse Managers Conference Committee)
Warren Williams – Qld; Lindsay Davies – NSW; Bart Cowan – SA; David Lowe – Tas; Ian Trevethan – Vic; Geoff Murphy - WA

2003 (Racecourse Managers Conference Committee)
Warren Williams (Deputy Chairman) – Qld; Norm James (Chairman) – NSW; Bart Cowan – SA; David Lowe – Tas; Ian Trevethan – Vic; Geoff Murphy - WA

2004 (Australian Racecourse Managers Association Inc.)
Warren Williams (Chairman) – Qld; Lindsay Murphy (Treasurer) – NSW; Bart Cowan (Deputy Chairman) – SA; David Lowe – Tas; Martin Synan – Vic; Geoff Murphy - WA

2005 (Australian Racecourse Managers Association Inc.)
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2009 (Australian Racecourse Managers Association Inc.)
Lindsay Murphey (Chairman and Treasurer) – NSW; John Tonani– SA; Murray Pyke – Tas; Martin Synan (Deputy Chairman) – Vic; Geoff Murphy – WA; Warren Williams (Secretary) – QLD

2010 (Australian Racecourse Managers Association Inc.)
Lindsay Murphey (Chairman and Treasurer) – NSW; John Tonani– SA; Murray Pyke – Tas; Martin Synan (Deputy Chairman) – Vic; Geoff Murphy – WA; Warren Williams (Committee and Secretary) - QLD