

# CASE STUDY

OUTSIDE BROADCAST

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THOROUGHBRED RACING PRODUCTIONS





# WHAT DOES IT TAKE?

WORLD CLASS HORSERACING  
REQUIRES WORLD CLASS  
PRODUCTION

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Producing the coverage of a horse race is far more detailed than just showing the race itself. For the racing carnivals in particular, the production requirement is often to be on air for several hours per day. Considering races are only a few minutes long, there is quite a lot of airtime that needs to be filled in between actual race time. This is an opportunity to showcase the sport on other levels which adds to the quality of the coverage and the viewer experience. So editorially depending on what's happening during the carnival or meet the team needs to follow the stories relevant to the particular time including; horses, jockeys and trainers.

The job of the producer is to make the whole programme work as a televisual experience for the audience and

deliver value for the various stakeholders associated with the distribution rights.

What's challenging is the distances associated with the race, which are unlike many other sports. This means content needs to be captured from many different locations scattered around the racecourse. These can include the start, finish, stables, pre-parade ring, winners circle and of

the spectators - only to mention a few. The use of steady cams has also increased over the years, as has RF/wireless in general. Additionally, the signal distribution is quite different to all the long copper cable runs used in the past, with much more use of fibre both for video, audio and communications.

**The biggest challenge is really to make sure that you have cameras in the right place at the right time.**



# A BRIEF HISTORY

## OF FLEMINGTON RACE COURSE AND HORSERACING IN AUSTRALIA

Australia has some of the world's best racecourses, hosting some of the world's most prestigious racing meets, and Melbourne's Flemington Racecourse ranks right up there as one of the best.

The area was first used for horse racing in March 1840, with the modern racecourse shaped not unlike a pear, boasting a six-furlong (1,200 m) straight known as 'the Straight Six.' The track has a circumference of 2.312 kilometres (1.437 mi) and a final straight of 450 metres (490 yd) for race distances over 1.2 kilometres (1,300 yd). Races are run in an anti-clockwise direction.

Every year on the first Tuesday of November the most prestigious thoroughbred horse race in Australia is held – **The Melbourne Cup.**

The first race was in 1861 and it's held during Spring Racing Carnival, which is a horse racing series during October and November.

The race club committee could hardly have envisaged the Cup lasting a century and a half and growing to become a significant part of not only Australian, but also global social and sporting culture. Such a popular event it is in fact that it became a public holiday for Melbourne and some of regional Victoria.

By 1880, 100,000 people would make the journey to

Flemington to attend the Cup.

The Melbourne Cup is a 3,200 metre race consisting of 24 horses, 3 years or older. Making the cut for the Melbourne Cup is difficult in itself, with only the very best thoroughbreds allowed to compete for the prize money pool of \$8 million.

Between 300 to 400 horses nominate for the event each season, with the final field limited to just 24 horses.

TRP has been producing the Melbourne Cup since 2009.

Thoroughbred Racing Productions based in Port Melbourne, Australia, produces over 3500 hours of High Definition live thoroughbred racing outside broadcasts each year. These broadcasts are provided for free-to-air and pay TV channels in both Australia and overseas, to on-course patrons and importantly the Stipendiary Stewards who manage the integrity of racing. That means delivering premium sports vision that not only captures the spectacular excitement of thoroughbred racing, but also the finer detail.

When TRP commissioned Sony to develop its new fleet of high definition outside broadcast vans, it wanted only the best.

The result is a racing production machine that can cut it with any sportscasters in the world.

Featured Technologies:

- High Definition Facilities
- EVS Server Technology
- 3D Graphics
- Extreme Super Slo Motion Cameras
- POV Cameras
- 3D Animation
- Telestrator with Pixel Tracking
- Virtual Graphics & Signage
- Remote Link Cameras
- Tracking Vehicle
- Class-leading wireless and wired communications

In 2019 TRP commissioned the 22-camera HDOB1, designed and built by Sony, and is a mainstay at high-profile races such as the Melbourne Cup Carnival of the Victorian Racing Club.

Sony Australia's OB vehicle production facility in Beresfield, north of Sydney, has been responsible for building some of the most technically complex mobile production trucks in the southern hemisphere. This includes vehicles for NZLIVE New Zealand, TV3 Malaysia, NSW Racing Australia, TDC Australia and Telstra.

# ABOUT TRP



## THE CHALLENGE

Due to legacy infrastructure and cascaded hardware, changes to the workflow or signal flow would often affect multiple parties in the production, therefore signal routing always required careful consideration.

Additionally, the ever-increasing camera quantities on site meant that the original truck was often operating in excess of its designed capacity. This, along with legacy analog infrastructure at the race courses, often resulted in complex workarounds and compromise.

Previously, TRP's main facility relied on a two-way radio field communications workflow and a traditional, centralized video router, with racecourse infrastructures that varied from racetrack to racetrack. TRP faced challenges common to any operation that relies on multiple two-way radio channels for communications: licensing issues related to multiple users on a single frequency who were attempting to use the frequency at a particular site, interference, and the complexities of spectrum management for large productions with multiple vendors.

## THE SOLUTION

Riedel's MediorNet system, consisting of a MediorNet MetroN core router and 21 MediorNet MicroN nodes, with fly-away frames and integrated multiviewers, enables modular and seamless distribution of video, communications, and data signals within each racecourse for broadcast production.

The Bolero-MediorNet solution has removed the bottlenecks of the previous intercom setup, giving each field communications position a discrete channel and enabling teams to work independently and efficiently. Before, the reliance on the single video router meant that users were constrained by the size of the router and design of the OB unit infrastructure; with MediorNet, each position is able to access all signals without affecting others.

The deployment is especially notable for its heavy focus on IP-based solutions, leveraging Riedel's expertise in IP-based workflows based on the SMPTE ST 2110 standard for broadcast," said Espen Brynildsen, Technical Solutions Manager, Riedel Communications Australia. "One of the key success factors for this project was the outstanding cooperation and open communication amongst Riedel, Sony, and TRP around aspects such as switch functionality and network optimization. It's another example of TRP's technology leadership and outstanding track record in broadcast coverage for thoroughbred racing."



# HD OB1

MEDIORNET, ARTIST,  
BOLERO SIGNAL ROUTING  
AND COMMS

The first OB truck project in Australia in which Bolero replaces a previous two-way radio workflow. It's also the first OB truck in Australia that uses MediorNet for all routing.

## OB1 SPECIFICATION SUMMARY

### CHASSIS

14.6m Trailer based on Sony Clam Shell design and build to TRP's specifications  
Hino 700 Prime Mover

### PRODUCTION

2 Tier Production Gallery  
64 Input 3 ME Sony XvS-6000 Switcher  
iPad Pro (e scripts and rundowns)  
4 x 43" Sony Preview Monitors driven by Riedel Multiviewer  
4 x Sony 17" PVM Monitors  
EVS Axon Cerebrum, Routing Switching, UMD and 3 level Tally  
Virtual Spectator Custom Designed 3D Graphics System  
Virtual Spectator Virtual Graphics

### AUDIO

Yamaha Rivage PM7  
4 x Dorrough Metering  
Genlec Monitoring  
iPad Pro (e scripts, rundowns and music downloads)  
Full Dante Integration  
Lectrosonic Radio Microphones and IFB monitoring

### COMMUNICATIONS

**Riedel Artist-64 Intercom Matrix**  
**ST2110-30/31 compatible AES67-108 client cards**  
**RSP2318 and DSP2312 SmartPanels (incl. ESP-2324 expansion panels - all connected via AES67)**  
**Riedel Bolero (operating 3 nodes: Local/Mounting Yard/Grandstand Roof and 15 Beltpacks)**  
**Riedel CCP-1116 - 2 Channel Commentators Unit**  
**Dante-108 client cards**  
2 x Tieline Bridge-IT Codec



### CAMERA CONTROL

6 Station Camera CCU control (2 x 43" Sony Preview, 6 x Sony Colour Grading Monitors, Leader Waveform Monitoring)  
22 Sony Cameras (HDC5500, HDC3500, HDC3100, HDC3170, PDWX400, ForA VFC7000)  
Fujinon Lenses(107x, 70x, 46x, 24x wide angle)  
4 channel 7G DTC Microwave Link system with full camera remote control  
3 Channel 2G DTC Microwave Link System with full camera remote control

### RECORD REPLAY

2 Station Replay Control Plus Multi-media Delivery Station  
3 x EVS XT3 Channel max servers (1 with Super Slow Motion Software)  
3 x EVS IP Directors  
EVS Epsio  
2 EVS Xfiles  
iPad Pro (e scripts, rundowns and music downloads)  
3 Sony XDCam Record/Replay units  
SimplyLive MMR410  
Sony Hawkeye Innovations SMART Relay Stewards Review System  
MOG Speedrail

### VIDEO AND AUDIO ROUTING



**Decentralized Router Matrix consisting of:**  
**Riedel MetroN and MicroN units including multiviewer and processing software**  
**19 local frames, 2 remote frames and 1 remote Compact Pro frame**

### TECHNICAL

1 Station Engineering control  
Phabrix Waveform Monitor  
EVS Axon Cerebrum Control Platform  
EVS Axon Router Panels  
EVS Axon Distribution  
Ihse KVM Switching and Signal distribution  
Ferrofisch Analog/Madi/Dante bulk converters  
Motu Mix Engines  
Juniper IP switching Matrix

# MEDIORNET

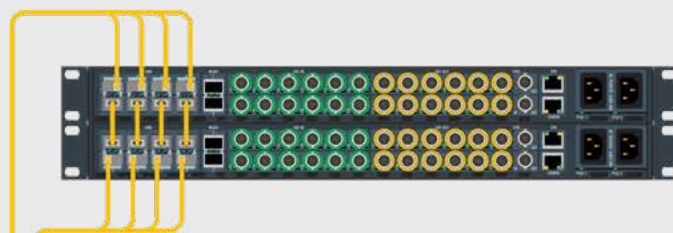
ROUTER TOPOLOGY

## STAGE BOX



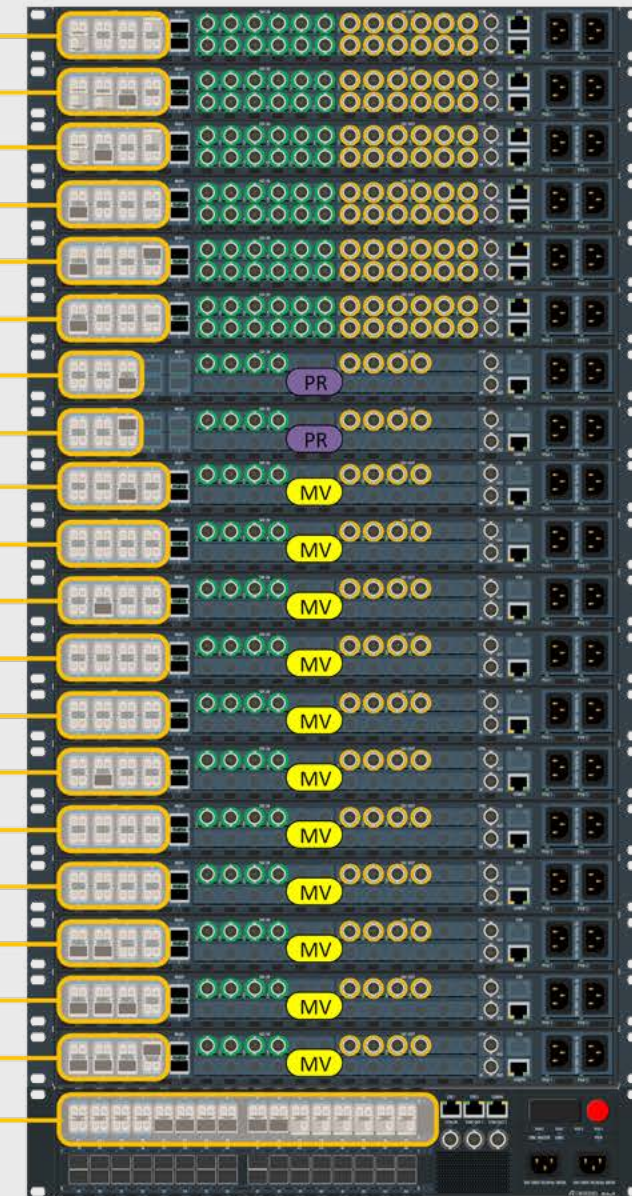
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## IN VENUE MICRONS



3x Neutrik opticalCON QUAD

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## HD OB 1



# THE TRP TRACKING VEHICLE

**Both crew members in the tracking vehicle have a very skilled job with the operator closely monitoring the output of the camera, the distance the horses are from the vehicle, as well as tracking them around the course.**

TRP's Tracking Vehicle is a bespoke design developed for one purpose only - the signature camera angle for the live coverage of the sport allowing the viewers at home to experience the action close up as the race unfolds.

The vehicle selection is based on strict performance criteria with custom modifications made to enhance reliability in a range of adverse terrains and seamless integration into the live OB. Things like tyre-pressure etc. is adjusted to match the conditions at the time of production. The stabilised Mo-Sys Engineering G30 camera mount makes it possible to get some of the most impressive Wide and Tight shots.

TRP also receives horseback reporter microphones and helmet camera relayed back to the main OB Van.





“OF ALL THE INTERCOM SOLUTIONS WE CONSIDERED FOR THE HDOB1 UPGRADE, BOLLERO OFFERED THE MOST ADVANCED FEATURES.”

CHARLES COLE, TRP

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