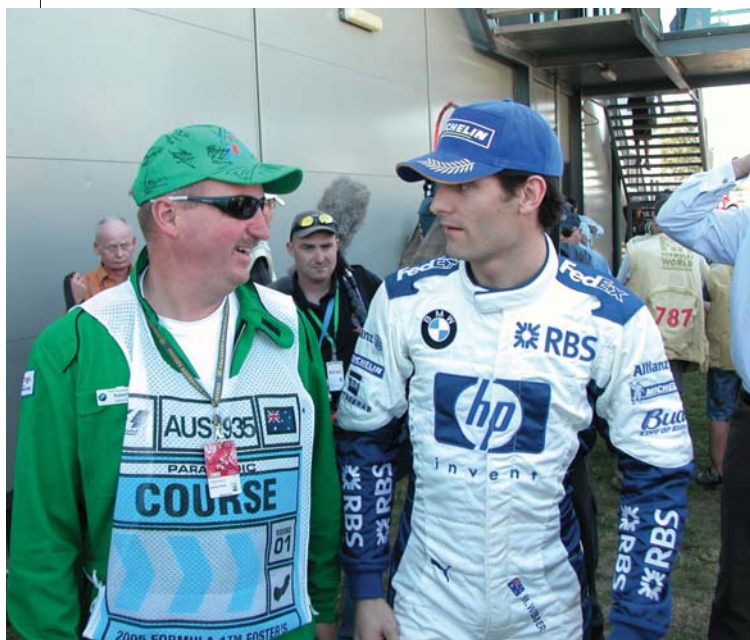


Imaging at the Formula 1 Grand Prix

AN INTERVIEW WITH ROBERT WILLS, RADIOGRAPHY COORDINATOR FOR THE AUSTRALIAN GRAND PRIX – ELLY BURLEY



Robert Wills with Mark Webber (left); Robert Wills and colleague

With speeds exceeding 300 km/h, it is no surprise that safety at the Formula One Grand Prix is a top priority. The Formula One has come a long way since its first race in 1950. Now touching the borders of 19 countries, the safety of the 24 drivers is constantly evolving with new innovations and regulations surfacing annually to ensure injuries and fatalities are kept to a minimum. The 21st century has seen the F1 Grand Prix equipped with a state-of-the-art medical centre, home to facilities and specialists just short of a small hospital. The Federation Internationale de l'Automobile (FIA) is responsible for the safety precautions at each Formula 1 Grand Prix circuit.

We interviewed Robert Wills, Melbourne Grand Prix's on site radiographer about his 16 years of service at the Australian Formula 1 Grand Prix

Alfred Health is contracted by the Australian Grand Prix Corporation to organise and staff the Australian Grand Prix Medical Centre (AGPMC) at Albert Park. The AGPMC is a collaborative venture between The Alfred Emergency and Trauma Unit, radiology, surgery and anaesthetics.

This purpose built, demountable facility is strategically positioned within the circuit to manage trackside incidents including major trauma, spinal injuries and burns. It brings critical care to the race track, reducing the time it takes to initiate care as well as providing primary health care, health promotion and medical review to Grand Prix crews, drivers, officials and service providers at this annual event.

The AGPMC at Albert Park has been in operation since 1996. It meets the requirements for medical centres and medical personal as specified by Confederation of Australian Motor Sport (CAMS) and FIA. The AGPMC is not indicated on any of the events public maps and is located in a fenced off compound manned by security staff 24/7 during the event. The public's medical first aid is covered by St John's Ambulance medical stations located around Albert Park.

Where did you gain your qualification?

I qualified from RMIT in 1982 and became the Radiographer in Charge of a two roomed emergency x-ray department in 1986. This now has metamorphosed in to the busiest trauma centre in the Asia-Pacific region with over 1100 major traumas with an Injury Severity Score (ISS) < 15 and ~7000 minor traumas included in 40,000 emergency department attendances per year. We have four trauma bays all with overhead x-ray equipment with CR, A 64 slice CT, two Full DR



State-of-the-art digital radiography unit with wireless detector from Carestream, which is attached to an AMX 4 plus portable x-ray unit at the trackside medical facility

emergency general x-ray rooms and a 1.5 Tesla MR unit located in our emergency radiology department with 24/7 onsite radiology reporting.

Also along the way I became a Level 2 accredited MRI radiographer in the 1990s and a PACS Master in the 2000s, but now as my responsibilities for the Emergency/Trauma Radiology Department and its service provision have increased, I don't get the opportunities to use these skills much anymore.

How did you get involved with the Grand Prix?

I became involved when the Australian Grand Prix Corporation contracted The hospital to provide the medical staff and equipment for the track side Medical Centre in 1996, after the race was moved to Albert Park from Adelaide. As part of my role as Radiographer in Charge of Emergency Radiology and Trauma, I have been the Radiology Coordinator for the AGP. My responsibilities include organising and providing the latest radiology equipment, through loans from the leading equipment companies and also co-ordinating the different radiography staff that come for a day at the event. Since 1996, we have rostered 64 other Alfred employed radiographers to work a day at the AGPMC.

Were you an F1 fanatic before you began working, are you one now?

No I'm not a F1 or V8 fanatic, but it's hard not to admire the engineering, power, speed and organisation of the teams and the whole atmosphere of this event. But once it is all over I don't pay too much attention to the competition throughout the rest of the year.

What is involved, set-up wise? How long does the setup/pack up process take?

As you can imagine, with the vast advancements in technology that

have occurred since 1996, the set up and pack up is much quicker these days. The medical services requirements have changed over the years and this has also affected the set-up and pack-up immensely.

An example of this is, in 2011 as trial, an extra exit gate on the east side of Albert Park that gave direct easy access from the race track to the Alfred Trauma Centre 500 metres away. This meant we didn't require the two helicopters based at the track for medical evacuations and we proved that the transfer time was actually less from the race track to a much better equipped and staffed facility for the critical injured patients. Because of this, since this year, the AGPMC operating theatre has become our second trauma resuscitation.

The set up starts with the loan equipment being delivered to the hospital by Thursday of the week before the start of the event. This equipment is loaded up on the Friday into one medium size truck. The equipment is then delivered the following Monday morning to the trackside AGPMC. This set up takes now about three days for the whole medical centre. The radiology side of things takes about one day. The first racing starts on the Thursday this is used to help to settle in all the race officials, track side marshals, medical teams, before the F1 start on the Friday. There is F1 practice on the Friday and Saturday morning and qualifying and grid position on Saturday afternoon. The main race is on the Sunday. The pack up and loading of our radiology equipment on to the truck is approximately one hour after the race finishes.

Do you have a team to help you?

Not with the radiology set up, but we do have a different Alfred employee to help each day of the event and this obviously helps great deal.



Helmets

Crash helmets became mandatory for F1 races in 1953. Helmets worn by drivers must meet strict regulations and be authorised by the FIA. Modern F1 helmets weigh approximately 1250 g and are made of carbon fibre, polyethylene and fire-resistant aramide.

The entire helmet (except the visor) is covered in a single layer of reinforced resin and then hand painted, usually in the colours of the driver's national flag. Beneath the outer layer lie multiple layers of carbon fibre and a strip of Zylon, used in bullet-proof vests. The inside layer of the helmet is made of a deformable foam-like plastic, for the comfort of the driver. This layer is covered in the same fire-resistant material used in the drivers' super overalls.

The all important visor is made of a clear or tinted polycarbonate. The inside of the visor is coated in an anti-fogging agent. The outside of the visor has several transparent tear-off strips to combat dirt build-up and can be easily removed mid-race to clear the driver's vision.

How do they breathe?

The helmet incorporates small air intakes that provide ventilation for the drivers. Filters within the ventilation prevent debris entering the helmet.

What equipment is involved? What type of machines do you have on hand? X-ray, MRI, etc. Who supplies this equipment, and where does it come from (is it hired or does the grand prix organisers source this?)

The loan x-ray equipment for the last two years has been graciously provided by Carestream. The equipment is their state-of-the-art digital radiography unit with wireless detector, which is attached to an AMX 4 plus portable x-ray unit. This has made the imaging during the event a dream and the set/pack up so easy.

The imaging view is a breeze with all the diagnostic display tools that a radiographer and doctor would require at your finger-tip seconds after the x-ray exposure.

We also have the ability to burn all of the imaging on to CD for the patients that is supplied by Spintec Oceania.

Describe the facilities where the diagnostic imaging occurs. Is there a Grand Prix "hospital" as such? How does the standard compare with the hospital in which you work?

The AGPMC is a temporary, transportable

modular facility that was originally constructed from six large modular units that come across from Adelaide. In 2002 it was completely rebuilt as part of the recommendations after the death of the track-side marshal in 2001.

It is now comprised of eight large modular units; this allows the main trauma resuscitation room and the operating theatre to be doubled in size. It is fully air-conditioned with Oxygen and until last year had the full array of anaesthetic gases required for an operating theatre.

The AGPMC has two patient entry points, a walk up ramp into a triage and seating area via the ambulance entry, which leads directly into the foyer between the main trauma resuscitation room, where we keep our x-ray equipment.

The second trauma resuscitation room (ex-operating theatre) both 20 sq metres in size.

Once you are inside the AGPMC it is legally an extension/annexe of the Alfred hospital and all its policies and procedures must be adhered to by its staff without direct influences from the Australian Grand Prix Corporation, CAMS or FIA.

The walk up triage consists of a large office area that also includes the communication and trackside visual hub in the medical centre. There is a direct "Hot" communication line to Race Control and another to the Alfred Emergency and Trauma Unit.

We have Race Control and Medical team's trackside CCTV coverage feed, which can cover any part of the race track instantly, if a crash occurs. This gives direct visual information/assessment of any medical incidences at the same time race control. Another separate flat screen TV provides the AGP general public coverage of the event. This is an excellent place to watch the Formula 1 racing, as we have to be in the Medical Centre when they are on the race track. This area is also equipped with computers/printers/internet via connection/servers to the Alfred's intranet.

Straight ahead takes you directly into the second trauma resuscitation room (ex-operating theatre).

There is also another trolley bay with hand held showers and drainage in the floor for burns patients or to help remove fuel or chemicals contaminates on patients. There is a storage room and access to the main trauma resuscitation room where we keep our DR x-ray equipment.



Formula 1 Grand Prix around the world

At every Formula 1 Grand Prix around the world the following safety precautions are in place:

- 1 Safety car** – a Mercedes Benz that travels with the Grand Prix, this is driven by former successful touring-car racer
- 1 Medical chase car** – is on stand-by throughout the entire race, manned by FIA's chief medical delegate
- 2 Rescue cars (R-cars)** – manned by an emergency doctor, four paramedics and a driver and can reach any point on the circuit within 30 seconds
- 2 Extrication teams**
- 2 MedEvac helicopters** – one is inside the circuit and one is on stand-by outside of the circuit. The F1 Grand Prix cannot begin unless the helicopters are able to take off
- 4 Salvage cars (S-cars)** – equipped with a rescue cutter, fire extinguisher and are able to tow the F1s
- 4 additional ambulances** – situated outside the circuit

There is a separate large store room which also houses the large suction compressor for the centre. Another part of the centre is the trackside volunteers medical team supply office. This is all constructed in a "U" configuration with an outside covered area in the middle.

Do you treat drivers every year, or are there other people who are treated in these facilities?

Yes, F1, V8 basically all of them, it's just due to the nature of the racing. The F1 cars have G force meters in them; if it reaches a certain level after a crash they must attend the AGPMC before they can race again.

What is the most common injury you deal with?

We treat roughly 70 patients in the AGPMC every year over the four-day event. But for radiology it is mainly feet and ankles, followed by hands, and then chest.

What is the worst injury you've seen at the Melbourne Grand Prix?

When the race marshal was hit directly in the chest by a tyre from a F1 car and was transferred directly to the AGPMC, but was pronounced dead after we had to perform a thoracotomy and laparotomy simultaneously.

Are you constantly working in the facility, or do you have some time allocated to watch the races?

No, we have to be present in the medical centre when the F1s are on the track. At other times, at least one of us, out of the two radiographers have to be no more than a few minutes away, but we are all contactable by mobile phone at all times.

I understand that there is a response team that can reach any crash site in 30 seconds, from the track, how long do the patients take to reach you?

Around the track there are six medical response cars with full medical kits with a race driver at the wheel, at least one doctor and an ambulance medic or nurse. For the F1 there is an extra Medical "Mercedes" V12 which follows the Grand Prix, country to country around world to every event, the same goes for the F1 safety car.

There are also trackside medical staff in the Pits, (in front of the F1 and V8 garages) and at the most dangerous corner on the track.

What other type of medical staff are present at the Grand Prix?

Highly skilled paid staff from the Alfred required at the AGPMC in 2012 included: ED physicians, ED registrar, CAMS physician, ED critical care nurses, two radiographers and a cleaner/orderly.

Over the years the AGPMC staffing requirements have changed. 1996 to 2011 we also had: trauma surgeon, orthopaedic consultant/surgeon, theatre nurses, senior anaesthetist registrar, theatre orderly and the early years Neurosurgeons on the team full time over the four days.

If there were an opportunity for others to experience this, what would be the best piece of advice you would give?

Apply for a job as a radiographer at the Alfred before 2016. 

Australian Institute of Radiography
Victorian Branch



IV CANNULATION

Saturday 7 July 2012

Session 1: 9.00 am - 12.00 pm

Session 2: 12.30 pm - 3.30 pm

Please nominate on your registration form which session you would like to attend

Australian Institute of Radiography
25 King Street
Melbourne Vic 3000

COURSE DESCRIPTION

This course is designed specifically for Medical Imaging Technologists to acquire technique and competency in intravenous cannulation. The workshop will comprise the theoretical and practical aspects of peripheral IV cannulation conducted by clinical nurse specialists. Areas to be covered include: relevant anatomy and physiology, access, technique and equipment, universal precautions, associated complications, demonstration, practice and evaluation and medical and legal implications.

PRE REQUISITES

Medical imaging technologists should have an interest in peripheral IV cannulation and wish to expand their knowledge and skills in this area.

COURSE ASSESSMENT

On completion of this course, documentary evidence will be issued to participants outlining the course description and hours of attendance. A follow up log book for supervised practice will be provided with the view of registrants obtaining a certificate of competency from their employer.

FURTHER INFORMATION & REGISTRATION

Please note that this is a very popular course, therefore if the course is over subscribed a waiting list will be created.