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A streak of luck for Crows

→ Adelaide will hope its opening win of the season, against Richmond last Sunday, is a sign its season is back on track.

The Crows' next opponent, North Melbourne at Etihad Stadium this Saturday night, should provide a more accurate guide to their 2010 hopes than the Tigers. But they will take a significant psychological edge into the match, having beaten the Roos in their past eight clashes by an average of 35 points.

Adelaide's winning streak is the second longest active run in the AFL, behind St Kilda's 11-game streak against Richmond. It began in round 18, 2004, when Neil Craig was coaching the Crows for just the fifth time – as a caretaker coach following Gary Ayres' departure.

However, this season has not been a good one for winning streaks. Last round, the then longest streak, 12, came to an end when St Kilda was thrashed by Carlton. Geelong's seven-game streak against Fremantle also ended in round three, while, significantly, the holds the Crows had over Carlton and the Sydney Swans – seven- and six games respectively – were broken in rounds four and two.

Longest current winning runs

- 11 St Kilda v Richmond, from round 19, 2003
- 8 Adelaide v North Melbourne, round 18, 2004
- 8 Sydney Swans v Richmond, round seven, 2006
- 7 Geelong v Swans, round 20, 2006
- 6 Fremantle v West Coast, round 18, 2007
- 6 Hawthorn v Carlton, round 17, 2005
- 6 Port Adelaide v Essendon, round nine, 2005

Winning runs broken in 2010

- 12 St Kilda v Carlton ended round seven
- 7 Adelaide v Carlton round four
- 7 Geelong v Fremantle round three
- 6 Adelaide v Swans round two

NICK BOWEN

EQUIPMENT

Is it time to redesign the football?

TED HOPKINS AND DARREN O'SHAUGHNESSY

It is a credit to football people and particularly the game's administration that an average of around 28 goals a game has remained fairly constant over the past 40 years.

It is our contention that scoring systems are the essence of any sporting code. If scoring trends run too far ahead or too far behind expectations, it is usually a sign of trouble, often leading to dissenting calls for an uprising.

Ultimately, it is the unique scoring characteristics of our game, along with the specific rules, that define our code.

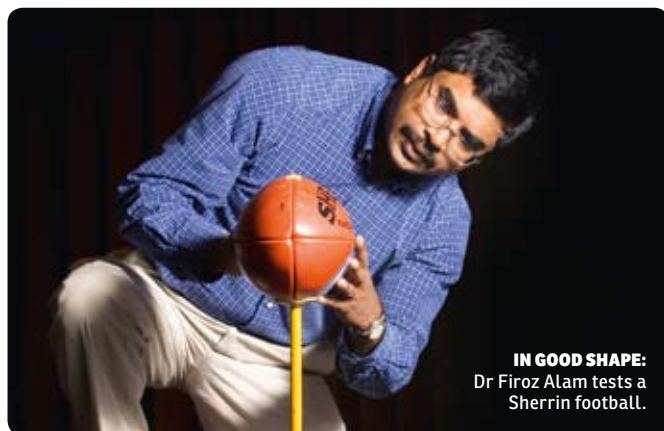
As pointed out in the round six edition of the *AFL Record*, both these elements (scoring expectations and changed boundary line rules) converged at the start of the 1969 season, with profound ramifications on how the game would progress.

In that round six column ('Let's get it straight, accuracy is not in decline'), it was outlined that before 1969 (when the out-on-the-full rule was also introduced, and players started predominantly using the drop punt instead of higher-risk kicks such as the torpedo and moved to more comfortable boots), footy was a relatively low-scoring affair.

In the 1960s, there was an average of 22 goals a game, with a scoring conversion rate of 47 per cent.

Indeed, it is truly remarkable, given the changes in football and in society over the past 40 years, that each season and decade the number of goals scored pans out close to about 28 a game. Also notable during this same period is the consistent scoring conversion rate, which has hovered around 52-54 per cent a season.

The other significant item that has remained unchanged



IN GOOD SHAPE: Dr Firoz Alam tests a Sherrin football.

for the past 40 years is the shape and construction of the mighty Sherrin football.

Scoring conversion has become a hot topic. Why on earth do players miss obvious sitters, especially when they are now fully paid professionals who should do better? It's an often-heard query.

The dismay felt at players missing seemingly simple shots at goal appears to have led to a widely held conviction that scoring accuracy is in terminal decline, where in fact it has slightly improved over time.

From the players' perspective, a reason goalkicking can be so unreliable is the difficult act of kicking itself: dropping the ball a metre or more to within millimetre precision while in motion and on to a fast swinging boot is not easy.

There is another dominant factor influencing scoring conversion – the Sherrin itself.

The head of RMIT University's sports aerodynamic research group, Dr Firoz Alam, describes our ball as displaying "highly erratic flight behaviour", due mainly to its stitched and laced construction.

"Given the current ball status, it is most unlikely scoring accuracy will improve beyond current levels, irrespective of how much practice players do," Dr Alam says.

He notes soccer, rugby, golf and tennis as examples of codes that have taken on board technology upgrades in ball aerodynamics as a means of regulating features of the game, therefore making them more attractive to participants and fans.

"In comparison, AFL belongs to another category of codes that have not embraced changes in ball technology," Dr Alam says.

Dr Alam is researching the aerodynamic behaviour of the Australian football. In addition, his research group is also looking at various shape designs and their effects on aerodynamic performance.

The preliminary study has revealed that the aerodynamic behaviour of the Australian football is significantly different from other spherical balls and it has extremely complex and erratic flight trajectory.

Why do we think the time may have arrived to consider changing the ball's specifications and, consequently, its dynamics?

If zoning and flooding, scrimmages, excessive handball and increased stoppages reach plague proportions leading to a trend in fewer goals scored each game, improving the flight characteristics of the ball is likely a more effective regulatory instrument for redress, compared to rule changes.

The ability to direct a faster and more reliable trajectory kick would encourage open play

There is another dominant factor influencing scoring conversion – the Sherrin itself

and likely contribute to higher scoring conversion.

A similar situation has occurred in soccer. Officials and the public prefer a game yielding an average of two or three goals a game. However, emphasis on structured defensive systems can easily result in too many zero-goal games.

Soccer is very conservative when it comes to making rule changes. But the willingness to improve the ball dynamics has proved spectacular, with the new-style ball having produced a more exciting brand of play that still accords with public expectations of average goals scored.

The AFL industry should take heed of what is happening in other codes.

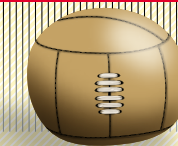
Game development is another reason for a change, particularly in relation to the stated objective of building overseas markets.

In so many parts of the world, the size of available fields is limited. A decent roost of the Sherrin can cover at least 60m or more. On some grounds overseas, it can mean a full-back can play on from a kick-in to himself, run a short distance and have a shot on goal.

A ball designed to travel less distance but with quicker and more accurate trajectory makes sense in such cases, and certainly for junior development in Australia.

We also think it could be a lot of fun mucking around with a new Sherrin. ☺

Evolution of the football



EARLY VERSION

→ An inflated pig's bladder wrapped in a simple leather outer was the rugby ball of choice for the first days of football.



MASS PRODUCTION

→ By the early 20th century, footballs were in mass production in Victoria and Western Australia.



TODAY

→ The modern AFL football, made by Sherrin, features a latex bladder and canvas-backed leather outer.

→ The aerodynamic properties of an Australian Football have significant effects on its flight trajectory. Spinning, crosswinds and the inherent asymmetry of the ball all play a crucial role in its mysterious flight trajectory.

It takes elite sports players a long time to hone the skills required to kick the ball accurately. Although a number of studies have been conducted on tennis, cricket and golf balls, there is limited knowledge of the Australian football's aerodynamics.

Over the years, the design of many sports balls has changed, with technologically driven improvements making them more accurate and aerodynamically efficient.

For example, adidas, the official supplier of balls to soccer's governing body FIFA, has used thermal bonding to replace conventional stitching.

The ball, to be used at this year's World Cup, has a seamless

surface design and an improved carcass shape. It differs significantly from previous balls in that it has only 14 curved panels, rather than the previous 32-panel ball that had been the standard since 1970.

Conversely, the Australian football has not significantly changed in more than 100 years. According to *The Australian Game of Football*, the earliest balls used (in the 1850s), were made of leather casings inflated with a pig's bladder. They varied in shape and size, though they were predominantly round.

When the Victorian Football Association was established in 1877, specifications for the ball were stipulated: it had to be around 66cm in circumference and oval in shape.

"The use of a rubber bladder ensured the size of the ball was now more consistent; durability also improved but balls still lost their shape and lacing," the book says. "During the 1870s,

Thomas William Sherrin – son of English immigrants who arrived in Australia in 1847 – worked at a Collingwood saddlery. Sherrin played football for Britannia, a local 'junior' club (and the forerunner of the Collingwood club), and balls from various clubs in the area were often sent to him for repairs.

In 1879, Sherrin set up a factory in Collingwood, and began manufacturing footballs.

"The Sherrin process today is to match groups of four panels (similar in feel and stress pattern) and to back the leather with canvas, which assists in water-proofing and holding the ball shape. The ball is then 'three-quarter sewn' inside out (i.e; three of the four longitudinal seams are machine sewn, canvas side facing out), before being pushed into shape from within. The bladder is then inserted, and the final seam is hand-stitched – the entire process takes 22 minutes."

IT'S FOOTY WITHOUT THE RULES.



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