

## **Analysis of the Famous International Scrum-half Technique of Rugby Player and Its Significance to Rugby Training Education**

**Zhiqiang Zhang**

Department of Physical Education and Art China Agricultural University, Beijing, China

johnny1974@sina.cn

**Keywords:** Rugby; “World Cup” Championship; Analyze of Pass Ball; Rugby Education

**Abstract:** This study analysis the Scrum-half technique of Australia team captain “George Gregan” of the man rugby (fifteens) “World Cup” championship. It reveals that the movement process, technical details and implementation of the Scrum-half of the world’s highest-level pass ball player in Rugby so that reasonable guidance (references) and specialized training focused on pass could be provided for the current rugby training education.

### **Introduction**

Since the establishment of the first rugby national team in mainland China in November 1997, looking at the development process of the project in China, the team has achieved mixed results, unstable competitive level, unclear playing characteristics, nonstandard technical movements and lack of reserve talents are the main obstacles to the sustainable development of the project. At this stage, in order to prepare for the 2020 Tokyo Olympic Games, the competitive level of the men’s and women’s national teams needs to be improved urgently. How to improve the pertinence of special technical training and form a good special skill inheritance and reserve of talents become the key to maintain and promote the healthy development of the competitive level of the project.

“Scrum-half” or “Half back” is a term in the rules of Rugby corresponding to position number in match “No. 9.” Scrum-half is the most frequent technical actions happened in Rugby compared with other actions like kicking, tackling, “Scrum”, “Line-out” and “Ruck”. It is also the start of pass ball. In match, attack- and defend- sides are fighting for possession of Rugby, which means Scrum-half is the bridge between players’ pass ball and transforming field of attacking. The level of pass ball not only present the level of individual mastery of skills, but also represents the level of the team’s overall competitive level. Pass, especially Scrum-half, has become an important factor in determining the outcome of a Rugby match. [1, 2]

Spinning ball is the major ball type in Scrum-half which is strict for pass ball player. The No. 9 player needs to master three types of pass ball: (1) Scrum or Ruck, pass ball at fixed position in ground, (2) Line-out or Maul, pass balls dynamically, and (3) pass balls in emergency response, like diving catch etc. The common key to all pass balls mentioned above is possible accuracy and fast which means that No. 9 player needs to pass balls at speed of hundred seconds.

This study analysis the Scrum-half technique of Australia team captain “George Gregan” of the 15-man rugby “World Cup” championship. It reveals that the movement process, technical details and implementation of the Scrum-half of the world’s highest-level pass ball player in Rugby so that reasonable guidance (references) and specialized training focused on pass could be provided for the current rugby training education.

### **Method**

**Research target.** The captain of the Australian rugby team, “George Gregan” [3, 4], has been hailed as one of the best pass players in the world (born April 19 1973, in Lusaka, Zambia). At the age of 21, he became a member of the Australian rugby team. He was 13-year working for the Australian team and 11-year working for the team “Brumbies” of “Super League.” He helped the Australian team win the championship of “World Cup” in 1999, won the “Bledisloe Cup” in 2002 when he was the captain of the Australian team, and won the runner-up of “World Cup” in 2003. Notably, he set a new word record that he has participated in sports competitions 120 times as a member of the national team, 55 times as the captain of Australian team and became Australia’s most influential captain. A respected senior rugby analyst said of him, “George Griggan is a great rugby player.”

**Rugby experts invited in this study.** We communicated and discussed with the rugby stars and coaches on George Gregan’s pass technical actions.

**Table 1.** Experts invited in this study [5–10]

Name	Nation	Position Number	Career & Experience
George Gregan	Australia	No. 9	1999 “World Cup” Champion; Player of Rugby Broncos; HSBS Bank Spokesperson
Martin Johnson	England	No. 4	2003 “Word Cup” Champion; Captain of England national rugby team (fifteens)
Eric Rush	New Zealand	No. 2	Captain of New Zealand national rugby team (sevens)
Waisale Serevi	Fiji	No. 5	Captain of Fiji national rugby team (sevens); Inducted into the World Football Hall of Fame
Clark Laidlaw	New Zealand		Coach of New Zealand national rugby man team (sevens)
Gregory Burke	Australia		Coach of Sunnybank Australian Rugby club
Willie Rickards	New Zealand		Coach of New Zealand Taranaki Rugby club

## Results

**Table 2.** Statistics of Scrum-half (George Gregan) in 1999 Rugby “World Cup” Final Competition (fifteens) (Australia 35:12 France)

Types of pass balls	Number of Pass	Distance of pass (m)			Failure
		3–5	6–10	>11	
Ruck	48	13	23	12	0
Pass in status of attacking	4	3	0	1	0
Scrum	2	0	2	0	0
Line-out	9	4	3	2	0
Maul	3	0	1	2	0
<b>Total</b>	<b>66</b>	<b>20</b>	<b>29</b>	<b>17</b>	<b>0</b>

**Table 3.** Statistics of Scrum-half (George Gregan) in 2003 Rugby “World Cup” Final Competition (fifteens) (Australia 17:20 England)

Types of pass balls	Number of Pass	Distance of pass (m)			Failure
		3–5	6–10	>11	
Ruck	61	7	34	20	1
Pass in status of attacking	21	10	10	1	0
Scrum	2	0	0	2	0
Line-out	9	0	4	5	0
Maul	1	0	0	1	0
<b>Types of pass balls</b>	<b>Number of Pass</b>	<b>Distance of pass (m)</b>			<b>Failure</b>

		3–5	6–10	>11	
<b>Total</b>	<b>94</b>	<b>17</b>	<b>48</b>	<b>29</b>	<b>1</b>

**Table 4.** Statistics of Scrum-half (George Gregan) in 2003 Rugby “World Cup” Final Competition (fifteens) (Australia 17:20 England)

Types of pass balls	Number of Pass	Distance of pass (m)			Failure
		3–5	6–10	>11	
Ruck	58	15	29	14	0
Pass in status of attacking	4	2	2	0	0
Scrum	3	0	1	2	0
Line-out	11	1	3	7	0
Maul	1	0	0	1	0
<b>Total</b>	<b>77</b>	<b>18</b>	<b>35</b>	<b>24</b>	<b>0</b>

It can be clearly seen from Tables 2, 3 and 4 that in the world competition, the major type of pass balls for George Gregan is Ruck (48, 61, and 58, respectively), and the most frequent distance of pass balls is middle distance 6–10 m. Notably, Others the number of other types of pass balls is relatively small, and the success rate of the total number of passes is almost 100%. Undoubtedly, the combination of speed and accuracy is the first factor for pass balls, and distance is second one. So, spinning ball is filled with two advantages: (1) speed and accuracy, and (2) the longest distance. The No. 9 player should pass ball to 30-m distance quickly and accurately. International level passers can always find the best pass point between 10–20 m. The choice of posture, position of hands, and reasonable effort are all factors that determine whether a good ball can be passed.

#### Analyze of spinning ball at original position

The ball is rotating along with the middle of the long axis to fly forward smoothly and quickly like a bullet. The player who is holding ball sideways faces the player who is ready to catch ball and the ball-carrier stands at a position about 6–7 m on the extension of the shoulder line on both sides of the partner. Now, we will take the right hand to pass the ball for example:

1. Hold ball with both hands which touch at the half of lower (left) and upper part (right) of ball, respectively. The left hand controlling the ball direction is forwarding to ball receiver, and the right hand controlling the ball strength is after left hand. Notably, pass ball with fingers and roots of them.

2. Bend body to position (75° forward) in a good status to pass ball and make ball at degree 45° to target the ball receiver who is raising his hands and ready to receive ball. The extension angle of both elbows is 110° and elbows are in front of body. Bend the knee (150°) and keep stability of body. The position of ball is stayed at 28–30 cm from the belly button.

3. Pass ball directly. Observe the receiver and lock the pass bullseye. The left shoulder is slightly sunk so that it is lower than the right shoulder of the exerting hand, at degree of 15° to the horizontal plane. The position of the two-handed ball and the angle of the elbow socket are unchanged. The trend of the force of the left shoulder sinking and the right shoulder is naturally inclined. The force elbow is higher than the guide elbow at a degree 15° to the horizontal. The core area of the body is stable, and the sending hand is as explosive as a boxing punch, and finally the wrist and fingers whip to increase the strength and speed of the ball.

4. Tighten fingers. After the pass, both arms point to the target bullseye and stretch naturally. The fingers are spread apart. Do not flex fingers or make a fist or rise above the shoulders. The palms of your hands are slightly opposite and point to the target bullseye. At the same time or at the end of the pass, the body and arms are kept tight for a moment to protect themselves from the impact of defense.

**Matters summary in education and training.** do not pinch your body or elbow when holding and pass the ball, deliberately lift and roll up, keep wrist straight, turn head to observe the pass bullseye (the outside palm of the player), bend knees, the core of the body stability, forwarding force from bottom to top, avoiding simple swinging arms. Straighten arms naturally, avoiding

unreasonable movements such as long and short hands, scissors hands, etc., burying hidden dangers of injury.

### **Analyze of ball in Scrum half**

The ball is revealed from Scrum or Ruck (the ball is on the ground). The forward player must immediately put his hands, feet, and body into preparation, and then quickly pass ball from the fixed position on the ground to the receiver behavior. Here, take the right-handed force pass as an example, the analysis is made for the two forms of pass the ground ball on the primary kneeling position and pass the ground ball in the actual combat. Primary pass on the ground in status of kneeling:

1. Player gets down right knee facing at the target. Ball is fixed on the ground in front of left knee.
2. Bend over to catch ball. Four fingers touch at the lower back position of the ball except thumb.
3. Player should focus on and lock the pass target immediately after catching ball. The abdominal muscles are tightened, the core area of body is stabilized, supported by stable legs, driven by the waist, abdomen, and shoulders. The rugby spins naturally with both hands spinning, corresponding to direction and ball strength control, respectively. The rotation rate of the ball is depended on the amount of force made by the wrist and fingers, and the distance of pass is determined by the speed of shooting with both arms.

4. Tighten all muscles tight immediately after passing to prevent collisions with enemy players.

**Matters summary in education and training.** In step 1, fix the football directly in front of or near the left leg, do not place it far away from the outside of the thigh, to avoid excessive tilt of the body's center of gravity, thus losing the stability and accuracy of the pass; in step 1, The tip of the ball should just touch the thigh, this is to avoid the back swing action at the moment of holding or passing the ball; in step 3, pay attention to the natural extension of the arms to the pass target when passing, not intentionally Stretch arms stiffly; in step 3, do not put all the force on left leg, follow the inertia of the straight pass, and return to the state of small lunge and body upright.

### **Analyze of passing the ball onto the ground in real match of George Gregan**

In rugby, due to the large number of participants in group battles, especially Ruck and Scrum, the passing environment is extremely complicated at this time, which requires passers to have multiple forms of passing skills to take responsibility himself. In the game, there are two main ways to pass the ball on the ground. First, when attacking at a slow pace, the ball is better controlled at the feet of the players, and the passing players can pass the ball in the form of probing the ground. Secondly, when the front and back pass players cooperate in the attack resulting from the group battle, when the ball cannot be well exposed, or the defense line has a loophole, the pass player needs to quickly get out of the ball, usually using the ball to pull back Pass the ball in the form of a ball. According to the attack direction to be selected (left or right side of the player), the leg to be used for probing and retreating is determined. Now, Let's take George Gregan's actual leg status as an example for analysis:

1. First lean over to lower the center of gravity of the body, quickly observe and find the specific location of the ball. After finding the ball, keep the ball as close as possible to the inside of the right leg. After fixing the position of the right foot, immediately look for the passing target in order to adjust the position of the left leg.

2. Both legs are in the shape of a side lunge, the right leg carries 70% of the body weight, and the left leg is properly extended to point to the passing target and bear 30% of the body weight. At this time, the eyes are locked on the position of the ball, and the ball is controlled by both hands and adjusted by passing the ball, so as to accumulate energy.

3. The Scrum-half player holds the ball with both hands and raises his head to lock the pass target. The right leg kicks the ground to drive the body to the left leg or the passing target quickly and smoothly. With the coordination of the body, the two hands holding the ball strike the explosive force directly towards the passing target, and the wrist finger whips force to complete the ball.

4. Follow the inertia, control the center of gravity and balance of the body, and the final posture is a small bow and arrow shape on the left leg. Hands with chest stretched out peacefully toward the passing goal. The left leg arch carries 70% of the weight, and the right leg knee joint is coordinated with the inner buckle to support 30% of the weight.

**Matters summary in education and training.** If the ball is under the protecting player's abdomen or thigh and is far away from the passing forward's position, the passing forward can use the advantage principle of the offside line to pull the ball with his foot to the position closer to the protecting player's feet, which is conducive to probing and controlling the ball. At the end of the leg excursion, the extension cord of the feet of the passer should be in line with the passing target to improve the passing accuracy. When holding the ball, do not lean over the buttocks, will affect the vision and passing accuracy of the pass; when driving a physical explosive pass, do not suddenly stand up and pull the ball up too far from the ground with both hands, thus affecting the strength and accuracy of the pass.

## Summary

High success Scrum-half passing is an important factor for rugby competitive level constantly improvement in long history, but rapid accuracy and reasonable technology are not easy to master in a short time. Therefore, the rugby education for teenagers at the beginning of rugby sport-specific training, coaches should teach them the right passing technology concept and teach their how to master specification reasonable passing technology, because the wrong technical knowledge framework once be constructed from initial period of training time, it will be difficult to correct for adult players, even when passing skills meet the bottleneck, modification, have to pass the ball technology, also aggressively of avoid by all means, but only on the basis of the original passing techniques for fine-tuning, or it will destroy the whole framework of passing technique system, reduce again passing rate is important to emphasize that the scientific training is the basic premise of vary from person to person, personalized training wisdom coaches should not the so-called perfect front passing skills impose on any player, but should be on the basis of its understanding of the principles of passing technology, combined with the individual characteristics of the players, choose the appropriate training methods and means, to form a scientific and reasonable passing technology. The analyses of the Scrum-half technique of Australia team captain "George Gregan" reveals that the movement process, technical details and implementation of the Scrum-half of the world's highest-level pass ball player in Rugby so that reasonable guidance (references) and specialized training focused on pass could be provided for the current rugby training education.

## References

- [1] Information about George Gregan on [https://en.wikipedia.org/wiki/George\\_Gregan](https://en.wikipedia.org/wiki/George_Gregan).
- [2] Sommerville, D. The Encyclopedia of Rugby Union. Aurum Press, UK. ISBN 1-85410-481-0.
- [3] P. Passos, D. Araujo, K. Davids and R. Shuttleworth, "Manipulating constraints to train decision making in rugby union," International Journal of Sports Science & Coaching, 2008, pp. 125–140.
- [4] Tim Gabbett, Jason Kelly, Troy Pezet. A comparison of fitness and skill among playing positions in sub-elite rugby league players, 11(6):585–592.
- [5] Information about Martin Johnson on [https://en.wikipedia.org/wiki/Martin\\_Johnson\\_\(rugby\\_union\)](https://en.wikipedia.org/wiki/Martin_Johnson_(rugby_union)).
- [6] Information about Eric Rush on [https://en.wikipedia.org/wiki/Eric\\_Rush](https://en.wikipedia.org/wiki/Eric_Rush).
- [7] Information about Waisale Serevi on [https://en.wikipedia.org/wiki/Waisale\\_Serevi](https://en.wikipedia.org/wiki/Waisale_Serevi).
- [8] Information about Clark Laidlaw on <https://www.therugbysite.com/coaching-videos/coaches/clark-laidlaw>.

[9] Information about Gregory Burke on <https://au.linkedin.com/in/gregory-burke-a151526a>.

[10] Information about Willie Rickards on [https://en.wikipedia.org/wiki/Willie\\_Rickards](https://en.wikipedia.org/wiki/Willie_Rickards).