

**The mechanics of the scrum and implications for the role
of the tight head prop, right lock and right flanker.**

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The Mechanics of Scrumming

Scrumming is considered an important part of the game and provides an effective platform to initiate attack. It is obviously important to control the scrum on your own throw in so forwards spend considerable time in perfecting this part of their game. The scrum is really the only part of the game in which 8 players must work as a unit and contribute to the overall outcome. The coach should be able to explain the role for each player in the scrum and their role contributes to the intended outcome. Much has been written about scrumming technique but not much seems to have been written about the dynamics of the scrum and the specific pressures that must be considered to produce the platform from which the team throwing in the ball want to attack. An important aspect of scrummaging is understanding the way in which the scrum will tend to move or wheel and how it can be used to advantage or needs to be resisted. Although the scrum can wheel in either a clockwise or counterclockwise direction there is a tendency for it to wheel more in one direction. In addition there are times when a team want to attack from a stable (“square”) scrum. This particular paper will focus on the role of three positions that seem to be critical in controlling the movement of the scrum.

The way the front row players pack down against each other produces asymmetrical forces that cause the scrum to move forward on the loose head side, producing the natural or clockwise wheel (usually the loose head props [LH] moving forward and the tight heads props [TH] going backwards).

There are huge forces placed on the TH prop, especially on the side throwing in the ball, to stabilize the scrum and prevent the natural tendency for him/her to go backwards and stop the scrum wheeling in a clockwise direction. This is particularly true when the team throwing in the ball is aiming for a stable or “square” scrum to use as an attacking platform.

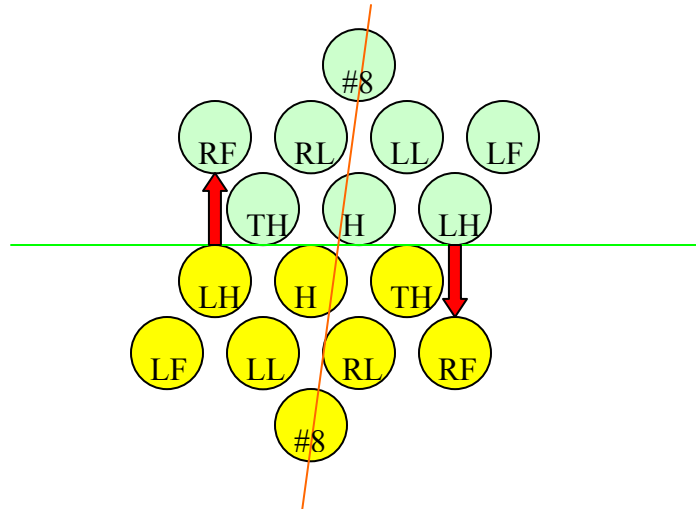


Figure 1: The normal setting of the scrum with the #8s binding between the locks

The problem (see figure 2) is exacerbated by

- the hooker (H) binding more on the LH on the team throwing in the ball which displaces the wheeling forces further towards the LH side and puts more pressure on the opposition TH forcing him/her to go backwards
- the #8 of the team throwing in the ball binding in the channel between the left flanker (LF) and left lock (LL) for channel one ball
- the opposition LH and H double-teaming the opposition tight head to put additional forces on him/her to go backwards and, therefore, disrupt or destabilize the opposition ball
- the opposition TH pulling (illegal) the LH of the team throwing in the ball forward or stepping back
- the opposition LH trying to dislodge (force up, or into a shoulders below hips position) the TH of the team throwing in the ball
- the angle of the push of the LH is angled in towards the TH which also contributes to the natural wheel of the scrum

In other words it is not difficult to wheel a scrum in a clockwise direction.

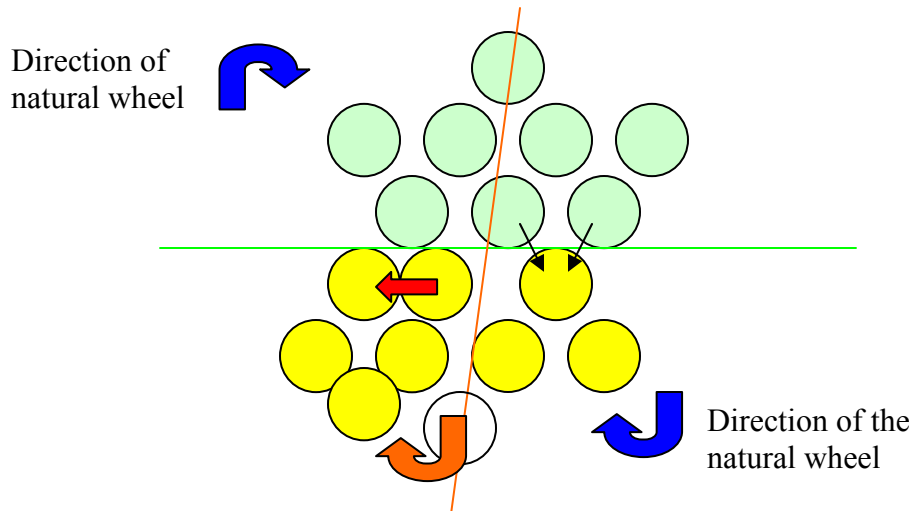


Figure 2: The tendency for the scrum to wheel in a clockwise direction is exacerbated by the positioning of the H as close as possible to the LH and the #8 of the team throwing in the ball as well as the opposition H and TH applying joint forces on the TH

The challenge to controlled scrumming is to resist and counteract the natural (and some unnatural) forces that make the scrum wheel in a clockwise direction. The important technical concerns center around the tight head being able to hold his/her position and shape. This requires considerable individual strength and technical ability, as well as the focused commitment of the right flanker (RF) and right lock (RL). The TH, RL and RF are considered a unit within the scrum and need to work in a coordinated manner (see Figure 3). The effective commitment of this group of three is critical for stable scrumming.

The primary responsibility, however, is with the TH prop because if he/she is unable to hold his/her shape or technical position the scrum will be wheeled. If the TH holds his/her scrumming position and the scrum wheels the problem is more likely because of lack of support he/she is getting from the RL and the RF. (Note that it is possible for a clockwise wheel to occur when the TH is stable, going back AND, although unlikely, going forward. So it does not always follow that a wheel is a result of the TH, RL and RF not doing their jobs.) In order to benefit from the contributions of the RF and RL the

TH must maintain his/her optimal pushing position.

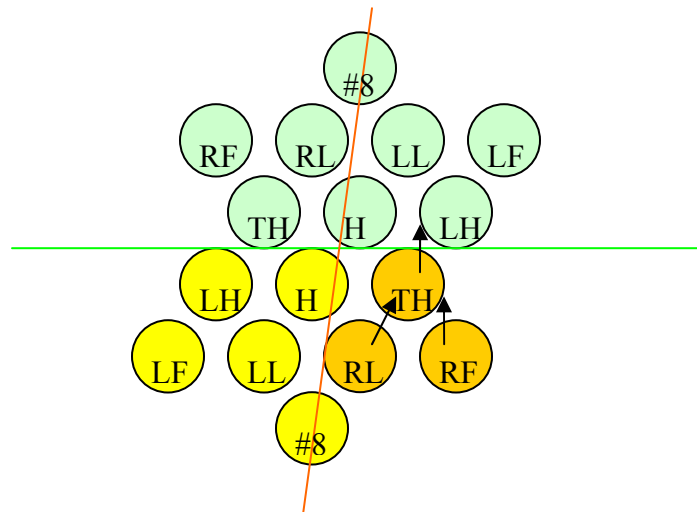


Figure 3: The coordinated effort required by the TH, RF and RL to counter the natural wheel

This is often difficult due to the natural forces with which the TH must deal and the actions of the opposition LH who is trying to move him/her out of the optimal pushing position. The optimal position for a TH on his/her own put in the scrum is a flat back, the knees behind the hips so that body weight contributes to the forward pressure, and the feet behind the knees (see Figure 4). Most LH props will attempt to drive up and in on the TH and take him/her out of the optimal position which disrupts the stability of the scrum and will cause it wheel. The TH must anticipate the pressure, keep the pressure through the right shoulder and prevent themselves from being pried out of his/her optimal shape and technical position.

In addition the TH should make sure his/her weight is evenly distributed on both feet and the shoulders stay square and horizontal to the ground. It is relatively easy for a coach to see if the TH is under pressure by observing the scrum from his/her own TH side and looking to see if the weight comes off the right foot and the right shoulder starts to rise. From my perspective the TH of the team throwing in the ball cannot be too low as long as they do not compromise their own position.)

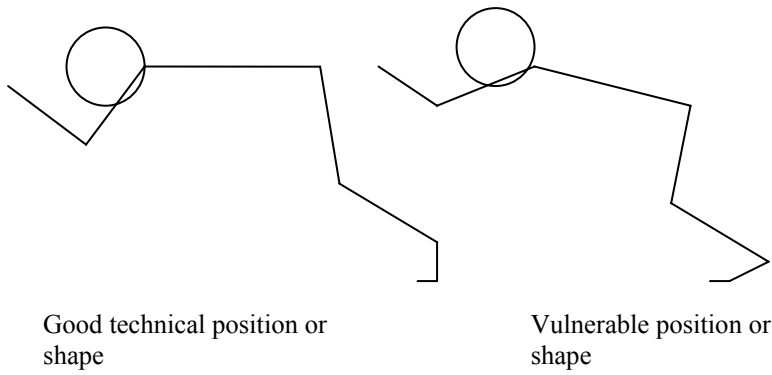


Figure 4: Optimal and vulnerable body position or shape of the tight head prop to resist the natural tendency of the scrum to wheel.

The coach can also see the relationship of the knees to the hips and the feet to the knees. It is common practice to have the TH lead the engagement of the front rows as this also helps the initial force to be directed down the TH side to counteract the natural forces and offsetting of the scrum. The TH needs to crouch as low as possible and engage with a flat back making sure he/she does not “fold” into the setting position (Figure 5). If they do fold or bend into the setting position the opposition LH will be able to get under the TH with his/her head in the sternum which provides a mechanical (and painful) advantage if the LH wishes to dislodge the TH and drive him/her back

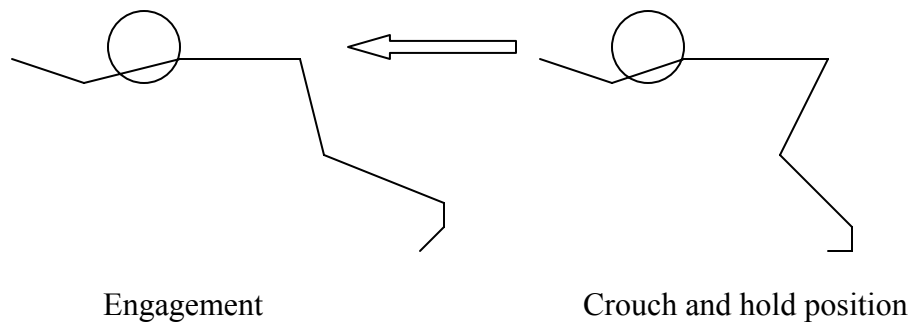


Figure 5: The crouch and engage position and dynamics of engagement for the TH prop.

Once in the optimal position it is critical the TH prepare for the pressures as the ball comes in, resist the tendency to be moved up and back, and maintain his/her shape and position so the RL and RF can effectively apply their efforts.

The contribution of the RF and RL are critical if the TH maintains his/her shape. It is common to have the RL focus on getting his shoulder as tight as possible to the spine of the TH prop (shoulder bone of the RL to the tail bone of the TH). This usually requires the RL to bind tightly under the TH first rather than with the LL. The recommended strategy is to bind under and across to the left hip of the TH and once in position bind to the LL. In the crouch and hold position the RL pulls the TH onto his/her shoulder so at the time of engagement the TH is being driven forward by the RL. Although difficult, the TH should be on his/her toes to meet the LH as quickly as possible once the referee says “engage”. The RL should also be squatting and not kneeling to respond quickly on the signal to engage with the feet shoulder width apart and weight equally distributed on both feet. The now common directive of “chest push through” helps to establish the flat back and maximize the transmission of force through to the TH.

The RF has a key role to contribute. Prior to the recent law change he/she was able to contribute to the TH by underbinding (i.e. left arm through the legs of the TH and shoulder tightly against the right glute of the TH). However, this is now illegal but if it is allowed at some time in the future it does contribute greatly to counteracting the natural wheel. *(Aside: the law was changed because it was thought to destabilize the scrum. It is my opinion that it does not destabilize the scrum but actually contributes to stability by helping to prevent the natural wheel which many teams use to destabilize the scrum and disrupt opposition possession. So I hope this law change is revisited. I have not seen any evidence that this technique actually caused any problem and in talking to many TH props they feel much more stable when supported by the RF underbinding.)*

Regardless of the way in which the RF binds he/she should push in a forward direction (not at an angle) in order to work optimally with the TH in resisting the natural forces. It is not common for the TH to be split out so there seems little need for the RF to push on

an angle and is more effective by pushing parallel to the touch line. He/she should assume an effective pushing position, similar to the shape of the TH but slightly lower (i.e. flat back and appropriate angles at the hip and knee). **It is critical that the RF maintains the push until the ball is out of the scrum.**

Given the importance of this three-person unit they should practice together on a scrum machine so they recognize the role they need to play and develop good technique based on the principles that have been identified (Figure 6).

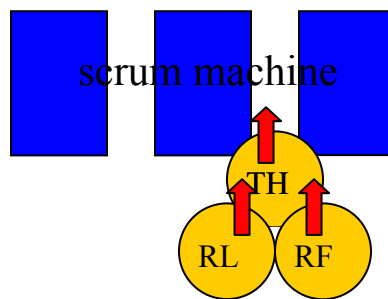


Figure 6: Practice for the three player pod.

The focus of this paper has been on the role of the TH, RL and RF on preventing the natural wheel and providing a stable platform. The other forwards in the scrum should also be aware of the mechanics/dynamics of the scrum and adjust their effort accordingly. The LH in particular must be aware of the effect he/she has in preventing (or inadvertently contributing to) the natural wheel and the strategies that the opposing TH may use to take advantage of the natural forces.

An additional practice to help the players appreciate the dynamics of the scrum is to have the team throwing in the ball pack down as a full scrum **without a RF** against a full pack (which would include a LF). The scrum needs to be controlled at the engagement and the pressure/push from the opposition **slowly** built up so the TH and RL of the team throwing in the ball feel the forces they need to resist.