



BALLANCE OF POWER

Pam Tabone Photos





BFS Program

In this remarkable sequence of photos taken by Pam Tabone, Myles McKinney demonstrates tremendous jumping power. McKinney is the starting tailback and leading receiver at Churchville-Chili, a high school near Rochester, New York, which was featured in our September/October 2007 issue. In one game this season against an undefeated team ranked in the top five in the state, McKinney scored three times, including a 92-yard touchdown run. He is a three-sport athlete who back squats double body weight for 5 sets of 5, power cleans nearly 100 pounds over body weight, and snatches over body weight.

Balance of Power

What coaches need to know for developing explosive athletes

During a weight training class taught by track coach Dr. Donald Chu in the early 1980s, two college football players were training alongside other athletes. Chu gave the football players a 1-pound medicine ball and told them to throw the ball with a chest pass, a motion similar to the bench press. One of the players

could bench press 400 pounds and the other 370, and they threw the ball 28 and 33 feet respectively. Impressive results. Also in the class was an elite javelin thrower who in 1984 earned a spot on the US Olympic Team, but his physique was unimpressive and he weighed significantly less than the football players. When Coach Chu gave the ball to the javelin thrower, he tossed the ball 42 feet – and it hit the wall! What this athlete had in abundance, and which the football players were deficient in, was power.

The universally accepted sports science definition of

power is “Force x Distance/Time.” Using this definition, coaches can determine the best exercises to make their athletes more powerful. This is exactly what sports scientist Dr. John Garhammer did.

Garhammer was the first person to earn a Ph.D. in biomechanics from UCLA, and he went on to do pioneering research in weightlifting, specifically in the area of power production. He published several papers on this subject, using theoretical models as well as video analysis of world-class powerlifters and weightlifters. What he found was that the Olympic



lifting exercises, such as the snatch and even partial movements such as the power clean, produced significantly higher power outputs than basic strength lifts such as the squat and deadlift.

Further, in a practical test published in 1999 that measured how quickly athletes could develop force, researcher Jeffrey M. McBride and his colleagues found that powerlifters were as strong as the Olympic lifters they tested, "...but scored significantly lower in tests for power and explosive performance." In studies published in 2003, Dr. Andrew Fry found that weightlifters had a higher ratio of Type II fast-twitch muscle fibers to Type I slow-twitch muscle fibers compared to powerlifters, as well as a higher percentage of the most powerful muscle fibers, which are called Type



IIX. Fry also found that the muscles of bodybuilders contained predominantly slow-twitch fibers.

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Getting back to our example of the javelin thrower versus the football players, most coaches would rightly conclude that the football players needed to work more on explosive movements such as power cleans and plyometrics. Likewise, because the javelin thrower was already explosive, the most effective way to increase his power would be to increase his strength. Plus, he would need to perform powerlifting



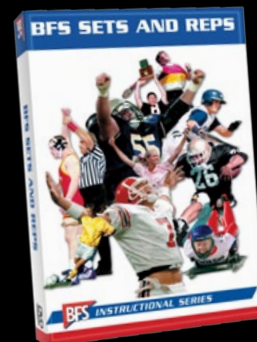
movements to add some muscle if he were to play a collision sport such as football. So regardless of the percentage, an optimal training program to develop the highest levels of power should combine strength lifts, explosive lifts, plyometrics, and sprinting.

When Dr. Greg Shepard came up with the BFS Total Program nearly four decades ago, he recognized that athletes needed a variety of training methods to develop optimal performance. Balanced training is essential for athletic excellence, and that's why the BFS Total Program includes not only squats and deadlifts but also power cleans, plyometrics, and sprinting.

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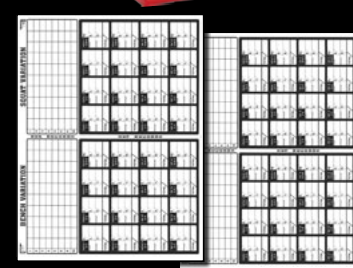
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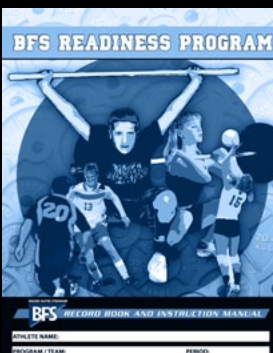
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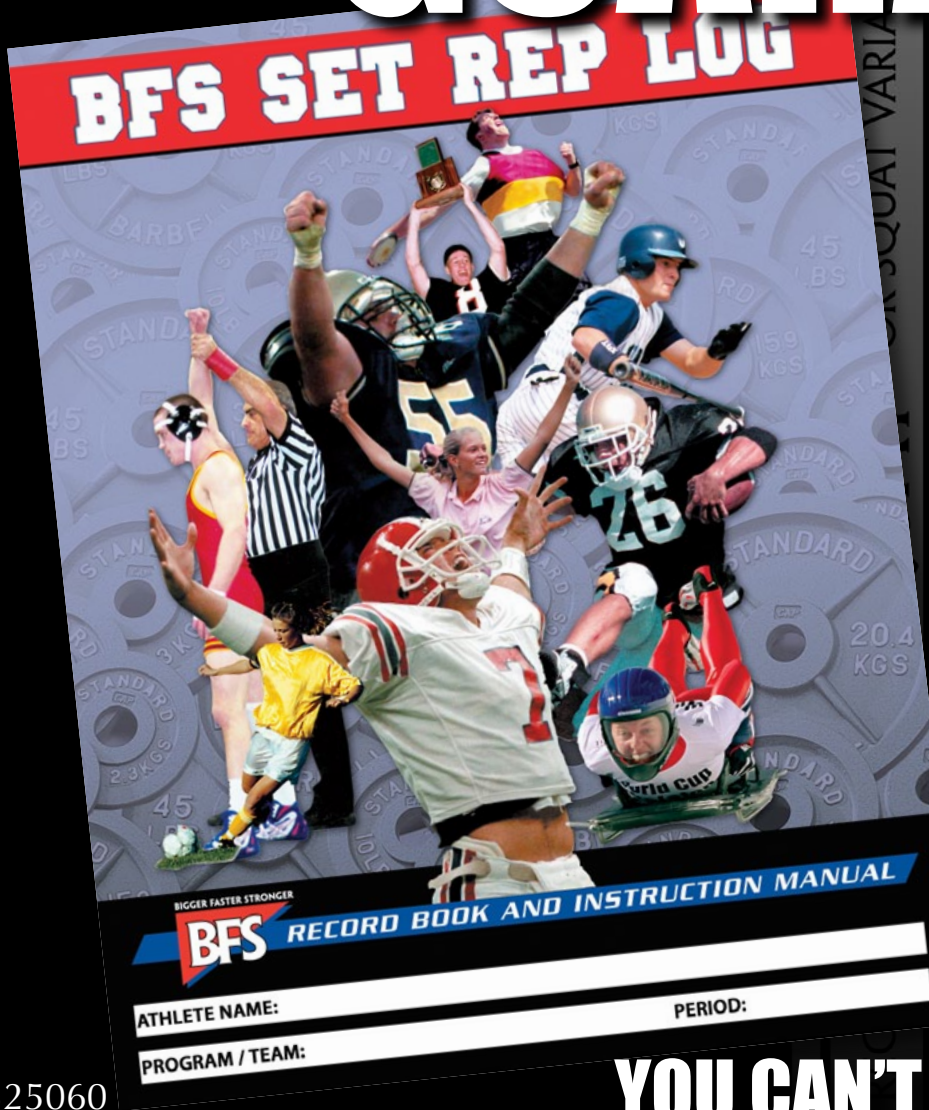
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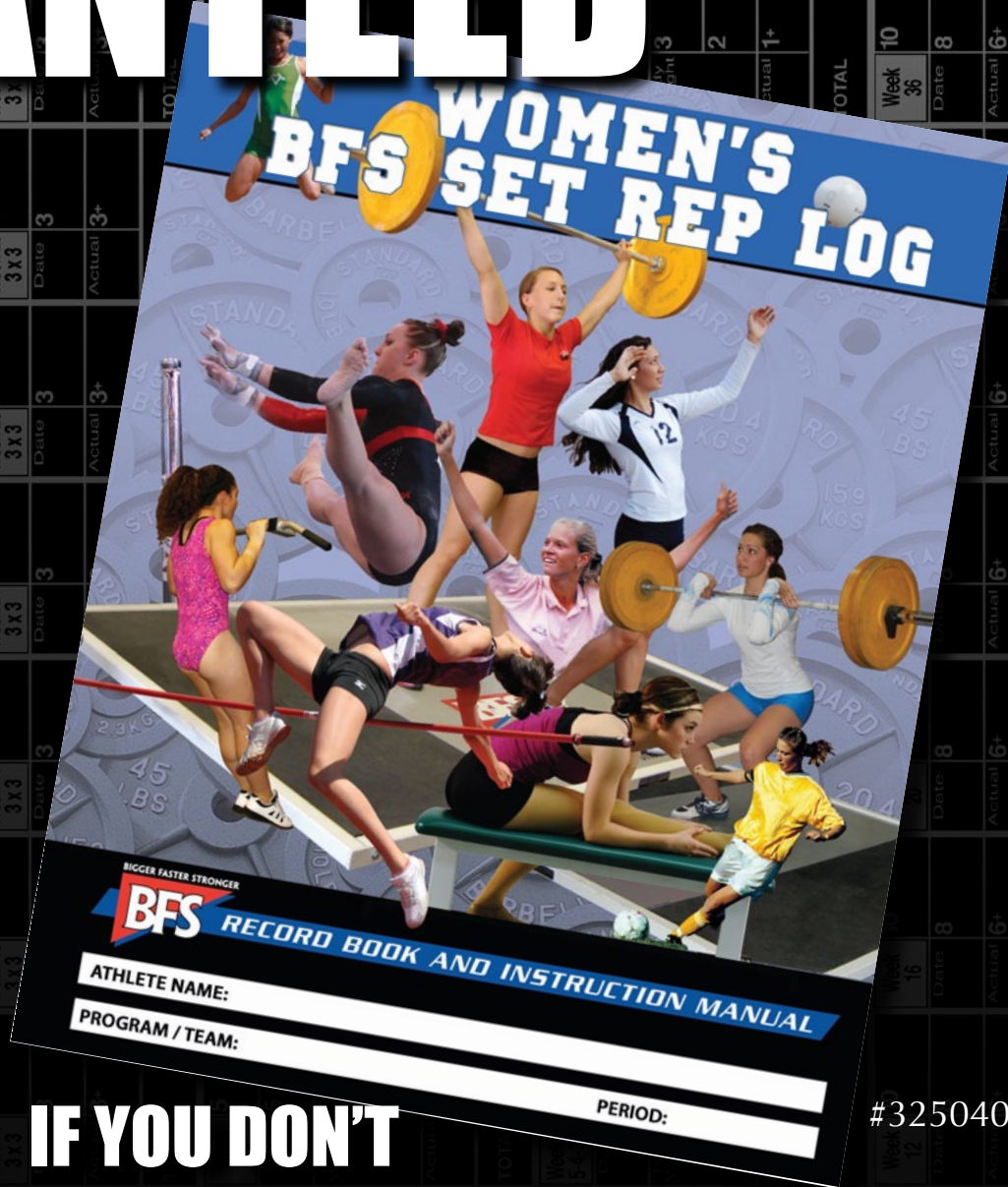
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