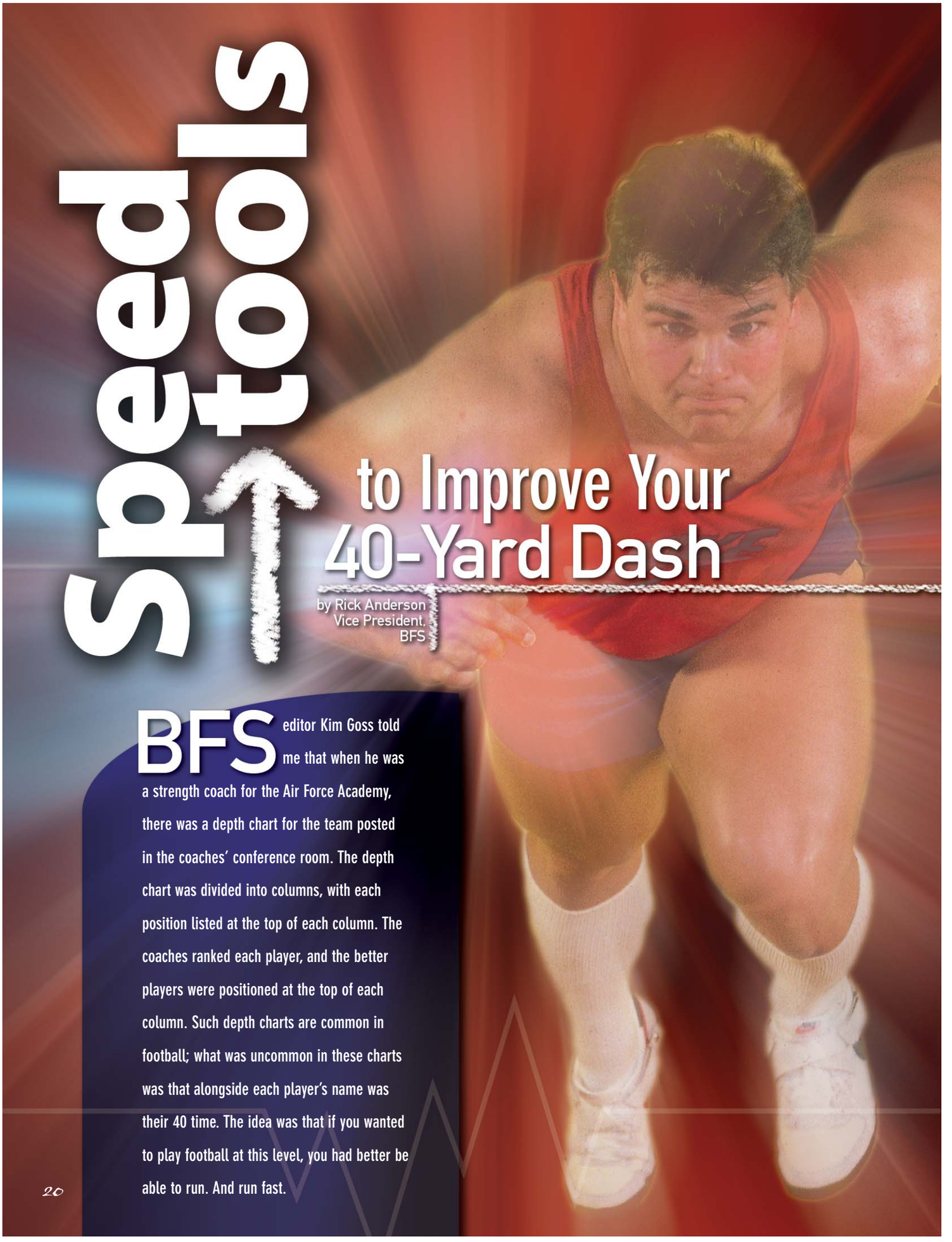


Speed tools to Improve Your 40-Yard Dash

by Rick Anderson
Vice President, BFS

BFS editor Kim Goss told me that when he was a strength coach for the Air Force Academy, there was a depth chart for the team posted in the coaches' conference room. The depth chart was divided into columns, with each position listed at the top of each column. The coaches ranked each player, and the better players were positioned at the top of each column. Such depth charts are common in football; what was uncommon in these charts was that alongside each player's name was their 40 time. The idea was that if you wanted to play football at this level, you had better be able to run. And run fast.

Although there is an ongoing controversy about how effective the 40-yard dash time is in measuring a player's ability, the 40 time does give a good overall indication of an athlete's speed and work ethic. When Maurice Clarett showed up at this year's NFL Combine and only ran a 4.7, his market value as a player dropped considerably. Either he wasn't as fast as everyone thought he was or—the more likely scenario—he simply hadn't been taking his preparation for the NFL seriously. Whatever the case, he's not going to get the type of salary you would expect from a former premier college running back who played a key role in helping Ohio State win the National Championships in 2002.

Another reason the 40 is used is that it's a relatively short distance, and most plays in football last only a few seconds. An athlete who has a poor start and doesn't accelerate quickly is not going to have a good 40 time. However, such an athlete may do well in longer sprints. I often hear stories about how a football coach recruits an athlete with great times in the 100- and 200 meters but then is disappointed to find that this speed doesn't transfer to the playing field because the athlete accelerates slowly.

At BFS we realize that having a good 40 time is a priority of every serious football player. And just as a carpenter or mechanic must have a variety of tools to do their jobs properly, an athlete must have the right conditioning tools to improve the speed qualities of the 40-yard dash. And believe me, I've looked at countless tools over the past 29 years that promised to make athletes faster. The few that we now offer in our catalog have stood the test of time and are proven to help make athletes faster. If they didn't, BFS wouldn't sell them.

The two most valuable tools in my speed toolbox are the sprint sled and the sprint chute. Here's how they can help you decrease your 40 time and improve football speed.

The First Step in Speed Training

Being strong often means being fast, at least at the start of the 40. Mark Cameron was the second American to clean and jerk 500 pounds, and he did it weighing only 240 pounds. Cameron went to the University of Maryland at the same time as Renaldo Nehemiah, the former world record holder in the 60 meters. From a standing start with no blocks, Cameron could beat Nehemiah for the first ten

| The perfect start!

| BFS Sprint Sled

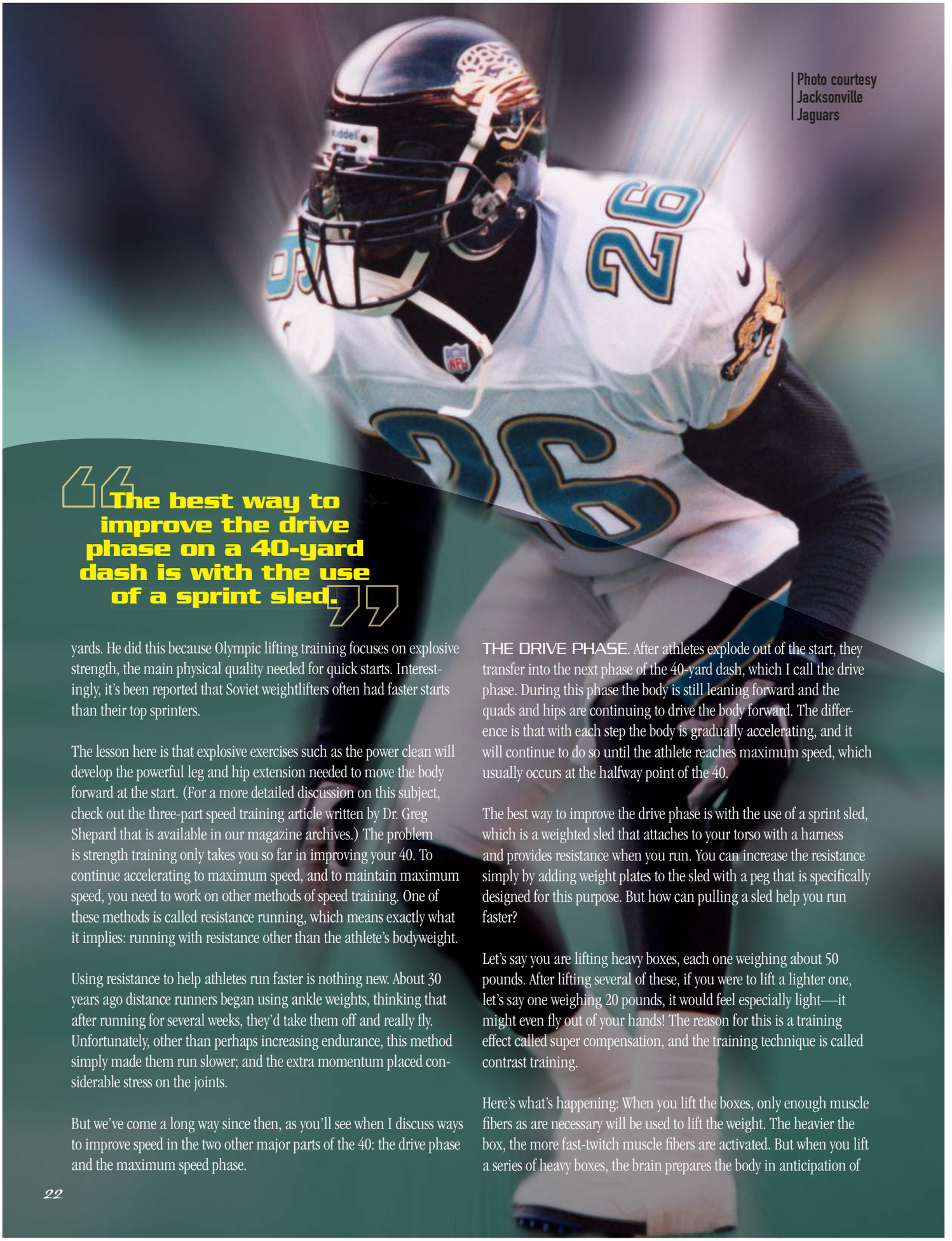


Photo courtesy Jacksonville Jaguars

> **"The best way to improve the drive phase on a 40-yard dash is with the use of a sprint sled."**

yards. He did this because Olympic lifting training focuses on explosive strength, the main physical quality needed for quick starts. Interestingly, it's been reported that Soviet weightlifters often had faster starts than their top sprinters.

The lesson here is that explosive exercises such as the power clean will develop the powerful leg and hip extension needed to move the body forward at the start. (For a more detailed discussion on this subject, check out the three-part speed training article written by Dr. Greg Shepard that is available in our magazine archives.) The problem is strength training only takes you so far in improving your 40. To continue accelerating to maximum speed, and to maintain maximum speed, you need to work on other methods of speed training. One of these methods is called resistance running, which means exactly what it implies: running with resistance other than the athlete's bodyweight.

Using resistance to help athletes run faster is nothing new. About 30 years ago distance runners began using ankle weights, thinking that after running for several weeks, they'd take them off and really fly. Unfortunately, other than perhaps increasing endurance, this method simply made them run slower; and the extra momentum placed considerable stress on the joints.

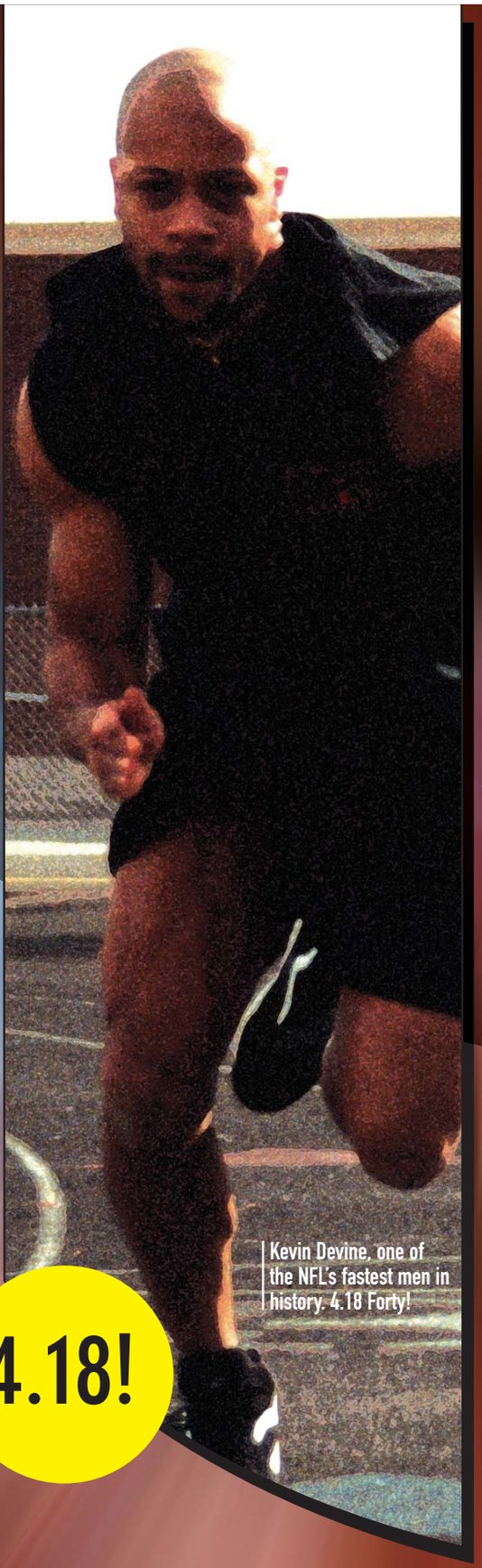
But we've come a long way since then, as you'll see when I discuss ways to improve speed in the two other major parts of the 40: the drive phase and the maximum speed phase.

THE DRIVE PHASE. After athletes explode out of the start, they transfer into the next phase of the 40-yard dash, which I call the drive phase. During this phase the body is still leaning forward and the quads and hips are continuing to drive the body forward. The difference is that with each step the body is gradually accelerating, and it will continue to do so until the athlete reaches maximum speed, which usually occurs at the halfway point of the 40.

The best way to improve the drive phase is with the use of a sprint sled, which is a weighted sled that attaches to your torso with a harness and provides resistance when you run. You can increase the resistance simply by adding weight plates to the sled with a peg that is specifically designed for this purpose. But how can pulling a sled help you run faster?

Let's say you are lifting heavy boxes, each one weighing about 50 pounds. After lifting several of these, if you were to lift a lighter one, let's say one weighing 20 pounds, it would feel especially light—it might even fly out of your hands! The reason for this is a training effect called super compensation, and the training technique is called contrast training.

Here's what's happening: When you lift the boxes, only enough muscle fibers as are necessary will be used to lift the weight. The heavier the box, the more fast-twitch muscle fibers are activated. But when you lift a series of heavy boxes, the brain prepares the body in anticipation of



Kevin Devine, one of the NFL's fastest men in history. 4.18 Forty!

4.18!

equally heavy boxes. When you throw in a light box, those extra fibers are still activated—the brain just doesn't immediately turn them off. This is why batters often swing heavy bats to warm up, hockey players use heavier sticks or pucks, and wrestlers practice against heavier opponents. In fact, Olympic lifters from Bulgaria have been known to do a few heavy squats before snatches to activate those fast-twitch fibers.

It follows that to improve speed training, you could use contrast training with the sled to activate those fast-twitch fibers used in running, followed by regular sprint training. (Although you could certainly get some benefit by using a sled just at the end of a workout, especially for being able to make those extra tough yards when plowing through defenders, using it this way would not take advantage of the contrast method.) To incorporate sprint sled training into your workout, after a warm-up you should alternate between sets of sprint training and sprinting.

"There are two big sprint sled rules. First, only use about 10% of your bodyweight when adding weight to your sprint sled. Second, only pull it a maximum of 20 yards."

~Rick Anderson, BFS Vice-President

One common mistake many athletes make when using a sled is using too much resistance, as this alters your running technique. (This is especially true if you use the inferior harnesses that have a rope or cord attached only around the waist, which encourages the athlete to bend forward excessively from the waist.) Many powerlifters use sled dragging with extremely heavy weights to improve their squatting, and this is fine for them. But they are training for powerlifting, not sprinting. A good starting weight, especially for beginners or athletes with low strength levels, is to use only 10 percent of your bodyweight when pulling a sled.

Another mistake is pulling the sled for too long. The first half of a 40 is primarily the drive phase, in which the body is accelerating. This is the time when you are leaning forward and really pushing with your legs. As soon as you stand upright, your acceleration stops and your hamstrings are more active. How long should you pull a sled? You want to pull it during the drive phase, so 20 to 25 yards is about the maximum distance. Resistance training for longer distances should be performed with our second speed tool, the sprint chute.

THE MAXIMUM-SPEED PHASE. By itself, sled training will improve your 40. But you can take it to the next level with chute training.

Chute training was introduced to the US by Ben Tabachnik, PhD. Dr. Tabachnik was a speed consultant for BFS some years ago and gave us many valuable insights into speed training, especially in using the speed chute. Many of the early designs for chutes were not stable. They would oscillate so hard and rapidly that it would throw the athletes off balance. Some clever marketers of early chutes said this helped develop joint stability, when in fact it was simply an excuse to sell an inferior product. After testing countless prototypes, BFS got it right and found the best design to minimize oscillation/spinning. But what does a chute do?

When you finish the drive phase of a 40 and have reached maximum speed, your primary goal for the remainder of the sprint is to try to maintain that speed for as long as possible—you might call this "quality speed endurance." In one analysis of Ben Johnson and Carl Lewis competing at the world championships, it was discovered that one of the main reasons Johnson had a better time than Lewis was not that he had a faster stride frequency but that he could maintain his maximum speed longer. Likewise, the reason many football players with great 40 times don't do as well in the 100-meter races is that they cannot maintain their maximum speed.

Sled dragging works only the drive phase of the 40 because the body must be inclined forward to maintain balance. The speed chute is attached to the waist so that the athlete can assume the upright sprint position needed to maintain maximum speed while maintaining perfect technique.

As with sprint sled training, you can alternate between bouts of sprinting with the chute and sprinting without the chute, but there is an even better way. Our BFS sprint chute has a quick-release harness that allows you to apply the super compensation method during an actual sprint. Let's say after starting with five 20s in a sprint workout you want to finish with five 40s using the chute. Run as you normally would, but when you finish the drive phase and are upright in the sprint position, run another ten yards and then release the chute with a flick of your hand. As you do so, those fast-twitch fibers are still activated, enabling you to run faster. Athletes have told me it feels as if someone were pushing them from behind or as if they were suddenly running with a strong wind. It's truly something you have to try to appreciate.

The BFS Sprint Chute

Minimal resistance is needed—just enough to make your muscles work harder without altering your running technique. Attaching several chutes to your body so you can really "feel the pull" is not what you are striving for. Generally a high school program needs only two chutes, a smaller chute for beginners and a larger one for more experienced athletes. Also, beginners who have no running background should avoid chute training until they have mastered the basics of the BFS eight-point technique system for perfect sprint running (again, check our magazine archives for details on this subject, and for more detailed workouts using the sprint sled and sprint chute).

Finally, use a conservative approach when incorporating any form of resistance running into your speed training. Use either sprint sled training or chute training during a single workout, but not both. And do not perform more than 10 sprints in a workout, whether with or without resistance. You want to focus on quality training, and you can't have quality if you are overtrained.

Using the appropriate combination of strength training, sprint sled training and chute training puts you on the fast track to decreasing your 40 time and increasing your football speed. The truth is sometimes it's not so much training harder that makes the difference, but training smarter with the right tools!

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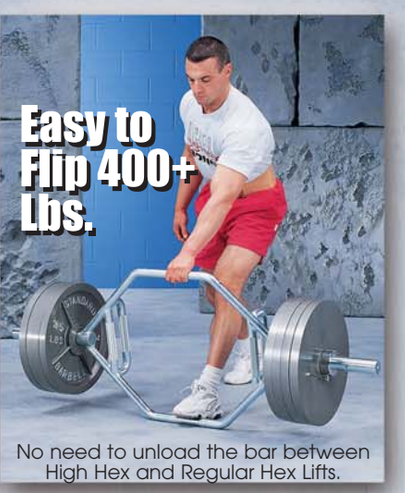

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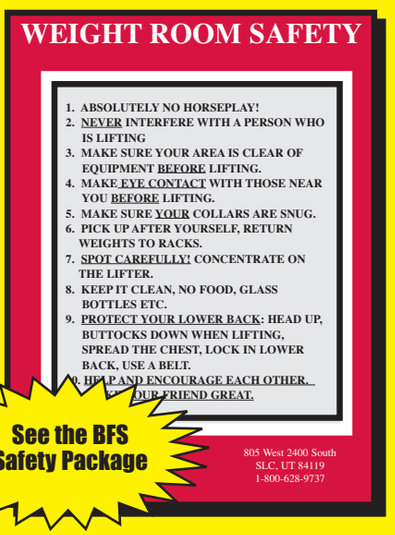

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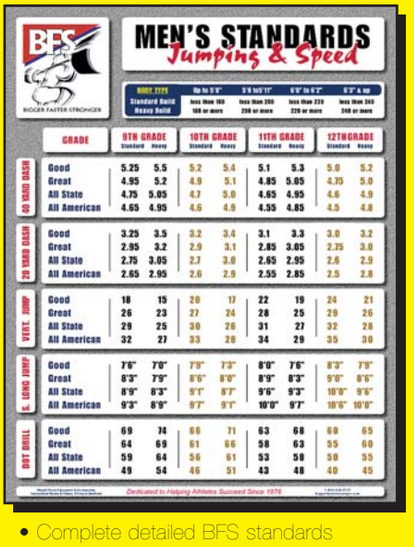

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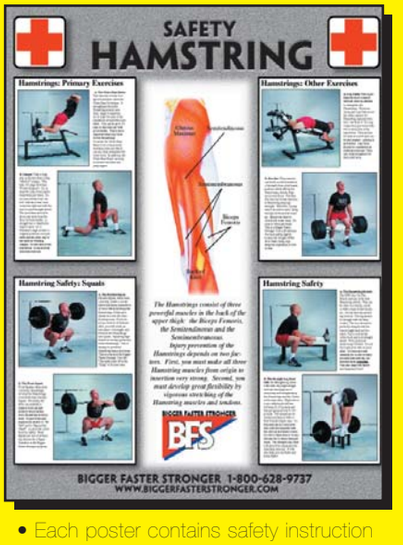

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