

his fastball has continued to increase, reaching an average of 94.1 mph in 2010, and 94.7 mph in September 2010 (see Figure 1). Velocity changes in the off-speed pitches are also shown in Figure 1. In 2008, Buchholz's change-up and curve both cluster in the high 70s, with the slider closer to 81 mph. By 2010, the change-up is thrown in the low 80s, while the slider touches 90 mph.

And there's no denying the results: in 2008, *FanGraphs* rated Buchholz's fastball at 18.5 runs below average; by 2010, his fastball was 20.8 runs above average. In 2008 hitters had crushed the fastball—all but one of Buchholz's 2008 gopher balls came off fastballs, often up in the strike zone. In 2009 and 2010 Buchholz managed to get more movement on the fastball: it can't be described as straight-as-an-arrow anymore. He also kept it out of the hitter's sweet spot, and generated ground balls—above 50% of batted balls in both seasons. He still had occasional wild streaks with the fastball when he would miss the strike zone by feet, but in contrast to 2008, less often was he wild in the strike zone. There were some games, especially against the left-handed hitters of divisional rivals New York and Tampa Bay, when he threw his fastball on the outside edge or just beyond it all game long. He would cross up left-handed batters by busting them inside with a slider, but he always kept the fastball away (see Figure 2).

In other games Buchholz was less successful at avoiding the hitters' sweet spots with his fastball, but those occasions did not cost him often in 2010. Is mistake avoidance a repeatable skill? The major league norm on fly balls is a HR/FB rate of about 10%. Buchholz's ratio in 2010 was a lucky 5.6%, so he shouldn't be expected to repeat that performance. He suppressed power more against righties, with a HR/FB rate of only 2.7% in 2010, compared to 8.1% against lefties.

CHANGE-UP

Keeping the fastball out of the hitter's zone means that it is essential that Buchholz be able to throw his other pitches for strikes. The change-up has always been his primary strikeout pitch, capable of generating swings-and-misses at a high rate. It is also the pitch over which he appears to have the surest command. The fastball occasionally runs out of control, but Buchholz can place the change-up anywhere he wants: usually,

