

The Radar Gun as a Training Tool

Part I-Using the Gun in Preseason and Practice

John Pinkman

The Gun Ritual

Does this pre-game scene sound familiar? Scouts, both collegiate and professional, huddle just behind the backstop, trading stories of their recent road trips and who's hot, who's not. One eye is on the person they're talking to, one eye is keenly focused toward the bull pen warm up skills of the pitcher they are there to see. Just prior to the game, the cases pop open and the "GUNS" appear. The ultimate sign of authority and power, the radar gun, is carefully un-cased and readied while tuning forks search for a hard place to strike and ring true. Today the gun may very well discover a star or break a heart. Someone may earn a scholarship, boost it by 25%, or regrettably drop down on a recruiting list.

The fans in the stands strain to see an emblem or a notebook to identify these road weary gun tote'n strangers. The pitcher approaches the mound and is given the game ball. (In the old days, you could hear a pin drop or your heart beat. Today the pre-game music is so loud you can't even hear yourself think.) The big moment arrives. The pitcher takes the sign. 15 guns slowly rise and carefully aim at their target as if it were a white tail deer in their sights. He begins his wind up slowly. He clearly knows what these first pitches mean. And here's the pitch...

The next sound however is not the bellow of "ball" or "strike". It's "Wadyagit..., wadyagit..., wadyagit? 85, 84, 84, 86...79? Damn organization, we never have the right equipment." There's always one scout with a \$495 special reconditioned deal. But it's his gun, and he knows its moods and can really interpret the damn thing. Especially after mashing it on the side a few times.

Well, so much for nostalgia. If this gun ritual is your only exposure to the value of radar guns, you're really missing major benefits that will produce results for your pitching staff. It has been my experience that the gun is a vital training tool.

Let's face it - this is, as Tom House phrases it, the "Nintendo generation". High tech internet surfers with multiple interests and extremely short attention spans. Our generation, though, has created in them a very high ability to learn - but only tapped if they themselves see the need to learn the specific information and buy into the process.

As a training tool, a radar gun is an objective high tech coaching and teaching partner. A good pitching instructor cares about teaching. Teaching implies learning and subsequent results. Just as in preparing a lesson plan for a classroom, pitching instructors need to be as interested in learning technologies as do English teachers.

Learning to Throw Slow

Ask your pitchers sometime to tell you the universal fundamental factor necessary to defeat an opponent in any one-on-one competition in any sport. They may know deep inside, but they won't be able to express it in words. But as pitchers, they need to be able to put it in words. The answer most of us would agree upon is that you must get your opponent off balance to win the point, score a bucket, open a hole, catch the pass, or strike him out.

We know that getting a batter off balance and disturbing his timing is the key to pitching. We also realize we need to master off speed pitches. An inherent assumption in the term "off-speed" is a higher speed with which to contrast. But contrast in speed is the point. The radar gun is a great training tool to teach change of speed. Ask any high school pitcher how fast he throws, and he'll have a reasonable estimate. Ask him how slow he can throw. Ask him the most effective speeds of his change, cutter, and curve, and you'll see two shoulders wrapped around his ears with "I doe no" (translated, I do not know) mumbled towards the ground.

While most of us would agree that location is the most important skill in pitching, change of speed is certainly second. Commanding the combination of the two is where a true pitcher excels. Throwing slow consistently with the same release point is hard to do. Here's where we can use the radar gun to help pitchers learn.

Recent advances in gun technology have really contributed to the results we can get from training. My gun is a digital Stalker Pro. It has a ball recognition mode which improves its performance. It can separate the motion of the arm from the motion of the ball. This can confuse some guns. In addition, the size of a ball is very different from a car or boat, which some guns are only designed to clock. The Stalker Pro samples the ball 3 inches out of hand and at last line of sight view. In this approximately 1/2 second, the gun computes the speed 120 times and gives a reading on the display at the same time of both peak and at-plate speeds.

In teaching fast ball release, I want to know how fast we are losing velocity at plate. It may be due to mechanics or ball rotation aerodynamics. With a fast ball that's not a benefit. However, with a change or other off speed pitch, that's a great benefit. Knowing those exact figures and recording them is important in teaching, learning and validating results.

Learning How To Learn

Feedback is essential. The hardest thing to learn in pitching is consistent ball release. It's really not something you can teach. It's a holistic action a pitcher must feel. Yes, you can say "Hold it a little longer, release it a little sooner", but how do you measure that? How can you remember that point in space? How can you reproduce that skill?

Repetition. Yeah, who didn't know that?! But repetition with instant feedback decreases the learning time and gives you quicker results. The gun is just the tool. Pardon me for getting overly technical here, but the instant speed feedback to the pitcher in training links the biomechanics of throwing motion with a cognitive process through neuro-muscular control. The feeling is supported with information and stored in memory. It's not an accident - it's learning how to learn! With instant velocity feedback the pitcher can say to himself, "this is what a 65 mph change feels like, and this is what a 70 mph change feels like. At 72 mph my pitch is not as controllable as when I throw it 68 mph."

Don't try to save money and guesstimate - even if you have a great eye for speed. Can you really tell the difference in three mph? Variables interfere and change the appearance of speed. Wind, light, sound cannot be trusted. The pop of a catcher's glove is seldom a reliable source of speed. Additionally, if you guess, you are required to be there during the entire workout.

Consistent Velocity Training

I like to train all of my pitchers with at least 3, and possibly 4 clearly identifiable and consistent ball speeds. The Consistent Velocity Chart (condensed below/above for this publication) has also been a great help in bringing together a good work out routine. The radar gun and this chart simulate the active involvement of the entire pitching staff.

The purpose of this chart is to develop consistency and record -

1. Four different pitches at four different speeds separated by approximately 5 mph
2. High strike to ball ratio
3. Increased command of location by establishing consistent velocity

4. Straight change development
(which every coach wants and no one practices)

This workout is most productive with four pitchers - two throwing and two recording the speeds on the chart. The charting pitchers are behind nets facing the on coming pitch with the radar gun on a tripod. Gunning behind pitchers always produces a slower, less accurate speed. The ball can be thrown into a catch net or to catchers. If you have a gun that can read both peak and at-plate speeds you need to decide which is more important to you as a coach. On this chart we are only going to record one or the other. Using a catch net will not get a true at-plate speed because the gun records the speed of the ball dropping to the ground after hitting the net.

Throw 20 fastballs in a row. Then stop and rest for a few minutes or chart another pitcher. Then throw 3 sets (10 pitches each) of 3 different off speed pitches. Include one more short rest period. The total number of pitches thrown is listed on the horizontal axis. The velocity of the ball is indicated on the vertical axis. The two speed scales allow the same chart to be used for different age groups.

“Throwing the chart” once a week and keeping a file for each pitcher’s charts over an extended period of time is valuable for analysis and as a teaching tool. The pitchers chart each other and can also assist in visual feedback as well. Over the period you want to see each pitch form a block line across the graph + or - one MPH and an increasing strike percentage. Variances in speed of three MPH or more indicate problems. Under non-game controlled conditions we set a goal of 70% strikes. As the strike percentage goes up, only then is it time to add velocity. Do so slowly and maintain accuracy. The pitcher can independently see how consistency, velocity, and accuracy relate to each other.

The chart is also the best self teaching tool to prove to a pitcher that his “special killer pitch” may move dramatically in many directions but will not work in a game because of a 20% strike ratio. He sees it for himself in black and white, and you don’t need to say a word. (Not that any of us are timid!)

Working with this chart points out other problems too:

1. Speed scatter will generally produce a low strike percentage
2. Steady increase of speed early on the chart can indicate a lack of focus or attention to drill work or, in a game situation, can be reflective of an improper warm up routine
3. Speed scatter and low strike percentage indicate that a pitcher is searching to find this pitch and most likely doesn’t understand the release mechanics
4. Speed scatter can indicate inconsistent ball release regardless of accuracy
5. Low strike percentage in fast ball may indicate throwing beyond effective speed.

This work out is a performance drill, unifying mechanics, visualization, breathing techniques, and focus. Pitchers should be thoroughly warmed up. Don't talk to them during this drill as you would in a regular bull pen work out. Save all comments for post drill chart review.

If there are not enough pitchers available to chart each other, put the hitters to work. This is a great vision drill for them. It has been my experience that all age groups love this pitching preparation activity. They are focused, engaged, and get results that they can see and learn from. Please remember, if your pitchers aren't preparing to pitch, they are not helping the team. Hitting fungos and shagging flies is an utter waste of a pitcher's practice time and will not produce the results you need on the mound during his next appearance.

This gun work out can bring a different perspective and challenge to off season monotony. It can also identify needed adjustments during the season and build confidence in both pitchers and catchers.

Radar Gun Purchases

The two predominate radar guns I've seen used in past year are the Stalker Pro and the new Jugs model. They are both digital, very light, and much more accurate and dependable than older analog technology. Both have 3 hour constant power capability from a rechargeable battery in the handle. This provides superior mobility by eliminating a tethered cord to an awkward brief case.

I have used the Stalker Pro and am extremely happy with the results. The men at the distributor, Radar Sales, are knowledgeable and very pleasant to work with. There are two models - The Stalker Sport sells for about \$1000 and features peak only speeds. I was advised to purchase the Stalker Pro which records out of hand and at-plate speeds, and I'm glad I did. It costs about \$1500. In this model, both speeds appear simultaneously and are locked in until you clear the gun manually. The Stalker Pro also has a valuable feature that adjusts the time on a self clearing mode from 2 to 4 seconds. This allows you to condense the total work out time with two pitchers alternating throws being charted at the same time. It also has a feature that adjusts range sensitivity, thus eliminating background vehicle traffic or other movement that can interfere with gun use at the game or on an open practice field. Both Jugs and Stalker can be mounted on a tripod for extended use. Extra battery handles and handles with a cable to a separate all day battery pack are also available, giving you power for a full day.

Don't let the cost stop you from acquiring a radar gun. Be creative. Host a fund raising seminar on pitching for your local baseball community. It works. Raise money and your reputation for service at the same time. The following pitching speakers are great. I've seen them all and one is available close to you.

Tom House	West Coast	San Diego Padres
Pat McMahon	South	Mississippi State
Dick Mills	South West	Tuscon, AZ
Rick Peterson	Florida (off season)	Toronto Blue Jays
John Pinkman	Mid Atlantic	Pinkman Pitching, VA
Don Roe	Central	Milwaukee Brewers
Mark Rose	Florida	University of South Florida
Bill Thurston	North East	Amherst College, MASS

Stalker Guns, Radar Sales Inc., 612-557-6654
Jugs 800-547-6843

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Part II of this training series will address the use of radar guns to assess pitchers' performance during a game.