Pittsburgh Outlaws
Data Driven Development Program

There have been some recent studies that have proven that advanced skills can be learned. Yes, talent for a certain skill is always helpful, however advanced skill acquisition is possible. Baseball players can gain the skills they need to be successful at a high level using something called "Deliberate Practice". This phrase was coined by Swedish psychologist and researcher Anders Ericsson. Deliberate Practice is the combination of purposeful practice plus expert coaching. Purposeful practice includes specific goals, intense focus, immediate feedback, and a player should be pushed beyond their comfort zone. The largest key to deliberate practice is setting and accomplishing the specific goals. At one time the goals required for specific baseball training were not measurable and therefore it was difficult to understand the training that was really needed. That has all changed in recent years through the establishment of "**Data Driven Development**".

What is Data Driven Development and how does it work?

Data driven development is simply using advanced data collection tools to understand what players are doing well and what they need to improve. There are lots of buzz words out there now such as "exit velocity", "launch angle", "spin rate" etc.. These are some of the specific goals that we reference above and are all now measurable using radar, infrared, high speed cameras etc.

The Pittsburgh Outlaws are making the investment in these tools to create a player development laboratory to provide "Deliberate Practice" which will give our players every possible advantage when they go on the field to compete.

The data collection tools we will be using……

Pitching Data Collection Tools

Rapsodo – Rapsodo is radar-triggered camera system pitch-tracking tool that captures real-time ball-flight data, allowing pitchers to get an accurate understanding of exactly what their pitches are doing during flight to make immediate optimizations and improvements in their pitch delivery.

Diamond Kinetics Pitch Tracker - PitchTracker Baseball's cutting--edge technology brings science--based motion analytics to a first-of-its-kind, smart baseball. Easy-to-understand metrics, data and pitching analysis give you powerful information right at your fingertips. PitchTracker Smart Baseball mimics the exact look and feel of a regulation-spec, leather-grain baseball, giving it a familiarity and durability that players and coaches will understand and appreciate.

Sony High Speed Camera – Our Sony camera is capable of filming at 960 frames per second. Filming our players at this frame rate allows our staff to see exactly how pitchers grip and release their pitches. Using this camera along with the data the Rapsodo provides adjustments to grips and releases can be made in real time with instant feedback.

Hitting Data Collection Tools

Hittrax – HitTrax is a combination of infrared camera hardware with a fully integrated software program designed to give baseball players instant feedback on their hitting metrics and exit velocities. The software allows players to track their statistics both instantly and over time, gauge trends, and ultimately, train their weaknesses and improve.

Diamond Kinetics Swing Tracker - cutting--edge technology brings science--based motion analytics to the baseball swing. Easy-to-understand metrics, data and swing analysis gives you powerful information right at your fingertips. Small, lightweight and simple to set-up, the SwingTracker bat sensor allows for a clean, consistent swing each time. This sensor will also allow our staff to monitor players practice habits. It will let us know who is putting the extra work in to get better.

RightView Pro Swing Analysis Software - RVP's video analysis system is built with state-of-the-art technology and designed specifically for baseball instruction. The RVP system is a proven premier training solution for coaches and players. RVP keeps it simple while giving the coach or player all the tools necessary to analyze their skills with immediate feedback. The true power of the RVP system is its ability to compare skills against the very best players in the game. RVP is the only analysis system licensed to use Major League Baseball players as models. See the best to be your best—all the professional models are shot from consistent angles for complete and accurate comparisons. RVP established a consistent vocabulary definable on video—to help players and coaches get on the same page.

Using the above tools, we can measure the critical metrics that drive todays game and then apply drills to optimize a players performance. There are other facilities that are using these methods with the model being "Driveline Baseball" in Kent, Washington. When most people hear Driveline Baseball, all they think is weighted baseballs. Well Driveline is far more than that. They are the kings of data collection development and have a thorough understanding of player development based on the data. They have become so successful that many of their staff have been hired away by MLB teams. The Outlaws will be using some of Driveline's ideas and training techniques and integrating them into what we already do.

The data driven development will be different for each age group of players. Below is an outline of the age groups and what our data focus will be:

8U thru 10U:

Pitching – Our pitching focus for 8U thru 10U players will not really change. We will be focused on teaching the basic mechanics of pitching. We will continue our every other Wednesday pitching mechanics practices. We will radar the players velocity from time to time for tracking purposes.

Hitting – We will measure the exit velocity of all players the first week of winter training. (we will also be measuring exit velos at tryouts this year). We will continue to teach the mechanics of the swing that we have been teaching for years, but we will also be implementing "Driveline" Techniques for building bat speed. **Each player will also be provided a Diamond Kinetics Bat sensor that they will be required to have on their bats at all Outlaw Winter Training Practices. The players bat sensor reps will be monitored by the staff for progress or regressions.**

11U- 13U:

Pitching - At this level we will continue to build basic pitching mechanics. We will also have them start using the Diamond Kinetics Pitch Tracker. This will introduce them to ball spin rate and some other basic metrics. We will also continue to radar their pitches. For some of the more advanced pitchers, we will start them on Rapsodo and introduce them to the art of spinning and moving the baseball. Some more mature 13U players may be introduced to the Driveline Building the Kinetic Chain Arm Health Program.

Hitting - We will measure the exit velocity of all players the first week of winter training. (we will also be measuring exit velos at tryouts this year). We will continue to teach the mechanics of the swing that we have been teaching for years, but we will also be implementing Techniques for building bat speed. **Each player will also be provided a Diamond Kinetics Bat sensor that they will be required to have on their bats at all Outlaw Winter Training Practices. The players bat sensor reps will be monitored by the staff for progress or regressions.**

14U – 18U

Pitching – Again we will continue to build each players mechanics. All pitchers will have access to the Driveline "Hacking the Kinetic Chain" arm strength program. This is a weighted ball program that will be closely monitored by our staff. We will evaluate each player and then develop the correct plan to meet their individual needs. We will be using a database to track player progress. All pitchers will also be monitored by the Rapsodo system that will allow us to improve their current repertoire of pitches and allows us to possibly design new pitches. We would like players at this age to purchase a Diamond Kinetics Pitch Tracker Ball. We can then track their bull pens and monitor progress thru the uploaded data.

Hitting - We will measure the exit velocity of all players the first week of winter training. (we will also be measuring exit velos at tryouts this year). We will continue to teach the mechanics of the swing that we have been teaching for years, but we will also be implementing techniques for building bat speed. **Each player will also be provided a Diamond Kinetics Bat sensor that they will be required to have on their bats at all Outlaw Winter Training Practices**. **The players bat sensor reps will be monitored by the staff for progress or regressions.** Our goal is to improve batted ball exit velocity, bat approach angle which creates more consistent contact and better ball launch angles.

Our organizational goal has always been to train our players to develop their individual skills. Using these tools will assist and enhance this process. We believe our training program, with the addition of these training tools, will give

our players a large advantage in preparing them to compete on the field and will allow them to progress and play at the highest level possible.