



This report explores baseball performance data, emphasizing hitter tendencies and their interactions with pitcher sequences. Using a combination of **Python (Matplotlib)**, **Tableau**, and **SQL**, it identifies key patterns such as hitter success rates based on pitch locations, batting averages in various counts, and overall performance metrics. The analysis highlights notable trends and outcomes, providing a data-driven perspective on hitter performance. Accompanied by detailed visuals and documentation, the full codebase is available on [GitHub](#) for further exploration.

First, we have Caulfield's stats:

Batter	games	plate_appearances	hits	at_bats	walks	strikeouts	singles	doubles	triples	homeruns	batting_average	on_base_percentage	slugging
Caulfield, Garen	15	53	15	41	10	9	8	2	1	4	0.366	0.509	0.756

The table summarizes the performance of Caulfield, Garen, across 15 games. Key statistics include a **batting average of 0.366**, **on-base percentage of 0.509**, and **slugging percentage of 0.756**, highlighting the player's exceptional ability to get on base and hit for power. Notably, the player recorded 4 home runs and 10 walks in 53 plate appearances.

Notably Caulfield hit **0.571 against Lefties** with a **slugging percentage of 1.571**.

Now here is the stats when facing a RHP:

Batter	plate_appearances	hits	at_bats	walks	strikeouts	singles	doubles	triples	homeruns	batting_average	on_base_percentage	slugging
Caulfield, Garen	44	11	34	8	8	7	1	1	2	0.324	0.477	0.588

VS LHP

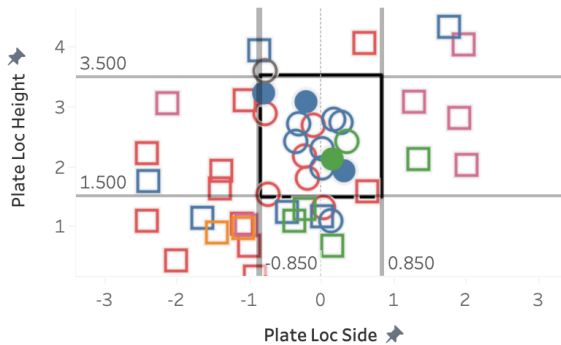
Batter	plate_appearances	hits	at_bats	walks	strikeouts	singles	doubles	triples	homeruns	batting_average	on_base_percentage	slugging
Caulfield, Garen	9	4	7	2	1	1	1	0	2	0.571	0.667	1.571

Important note: Some data points were marked as NULL in the dataset, which may result in minor discrepancies or incomplete insights in the analysis.

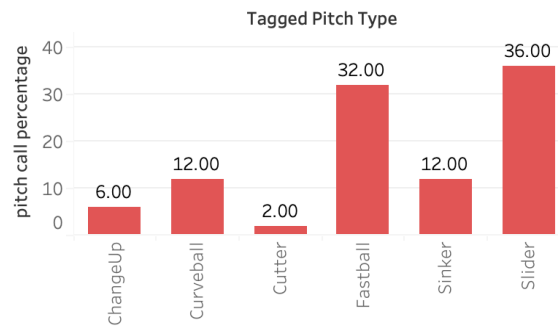
These graphs were made with **Tableau**:

The tableau offers more detail like **pitch call**, **play result**, **exit speed**, and **KorBB**.

0-0 Count Strikezone



0-0 Count Chart

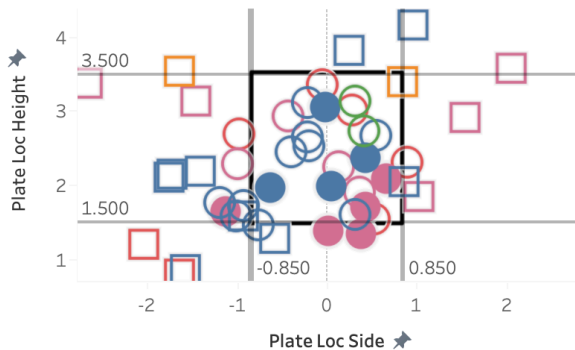


Tagged Pitch Type	
■	ChangeUp
■	Curveball
■	Cutter
■	Fastball
■	Sinker
■	Slider

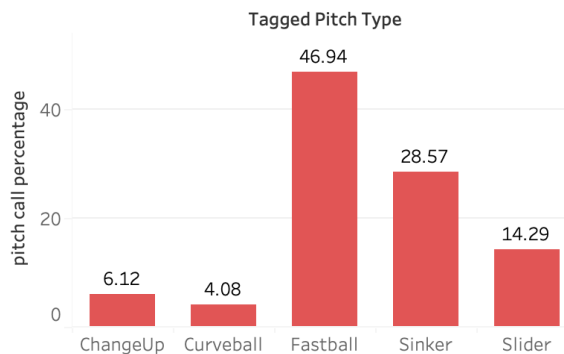
Pitch Call	
□	BallCalled
○	FoulBallNotFieldable
○	HitByPitch
●	InPlay
○	StrikeCalled
○	StrikeSwinging

Caulfield performed well when jumping on first pitch fastballs, recording a single and a triple. Curveballs also resulted in a double. On first pitch, Caulfield seems to receive **offspeed pitches** about **50%** of the time.

Hitter's Count Strikezone

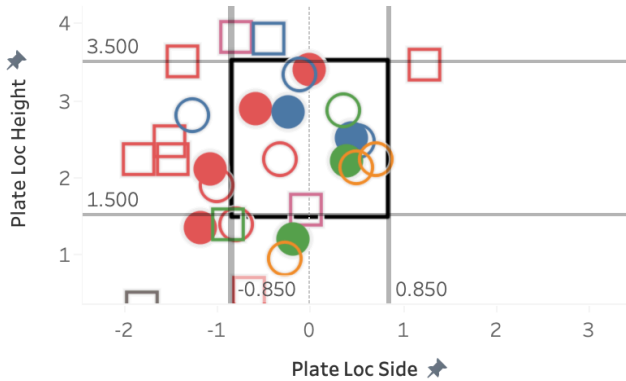


Hitter's Count Chart

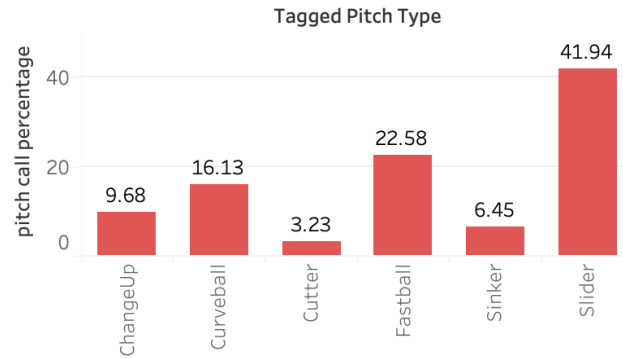


Against fastballs in hitter-friendly counts, Caulfield secured a single. Over **74%** of the time the pitcher is throwing **non-offspeed pitches**, which can be expected during a hitters count. Although only one hit is recorded here, exit velocity is consistently above **90 mph** and some hitting **100+ mph**, so overall these are still very good AB's.

Pitcher's Count Strikezone

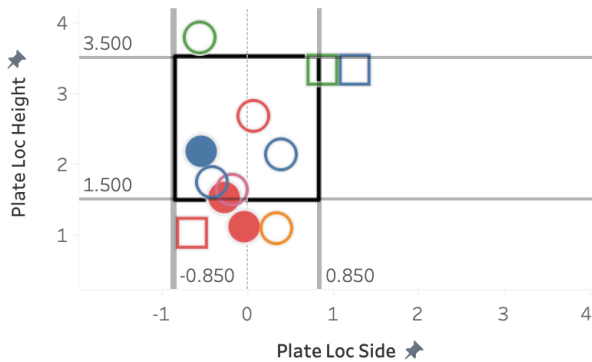


Pitcher's Count Chart

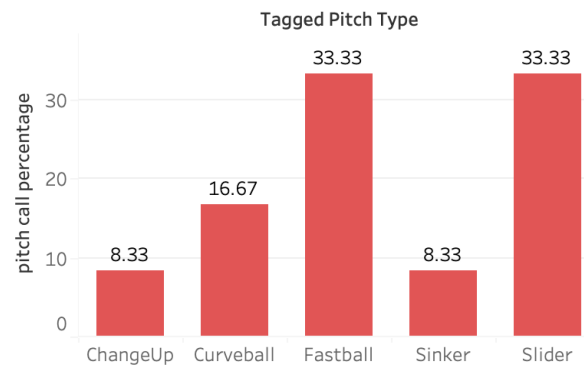


In disadvantageous counts, Caulfield excelled against sliders, managing three singles. He also found success against fastballs and curveballs, with a single and two home runs combined, despite the pitchers having the upper hand. We see that an **off-speed pitch** is thrown around **66%** of time in these counts, which is also expected.

Full Count Strikezone

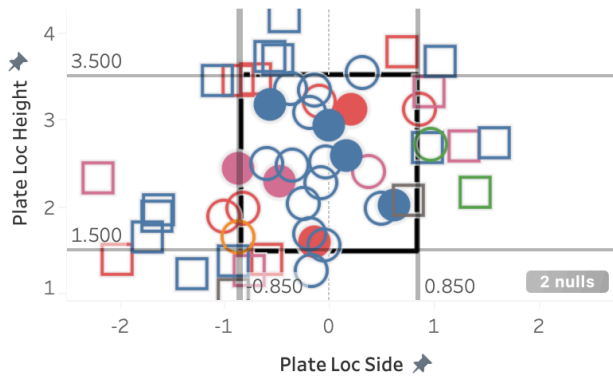


Full Count Chart

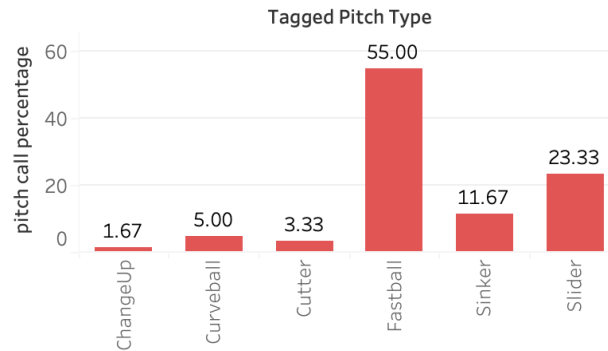


Offspeed pitching was the primary challenge in full counts coming in over **57%** of the time, but Caulfield managed a single and a double against sliders. He did not record any hits against other pitches in these high-pressure situations.

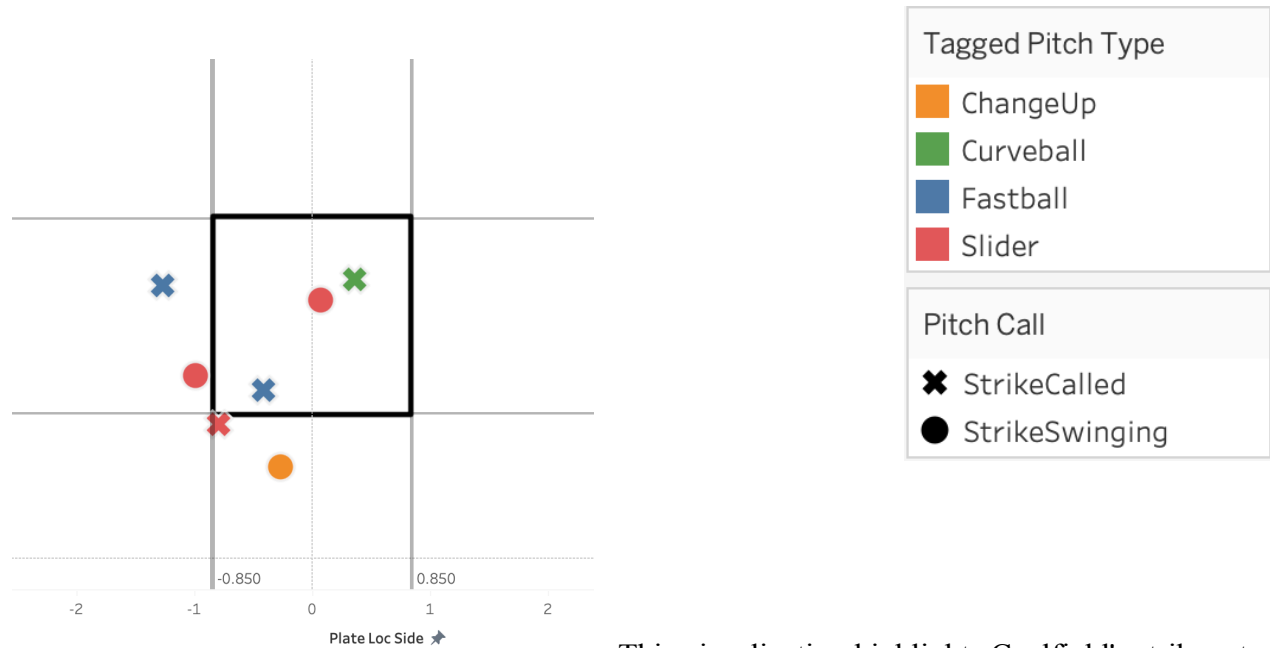
Neutral Count Strikezone



Neutral Count Chart



Surprisingly a **fastball** was thrown **55%** of the time in neutral counts. Caulfield took advantage of this by hitting a homerun and a single. He also had another home run against a sinker in a neutral count. Possibly something to keep in mind when in these counts (1-0, 0-1, 1-1), since the chance of something fast is high.

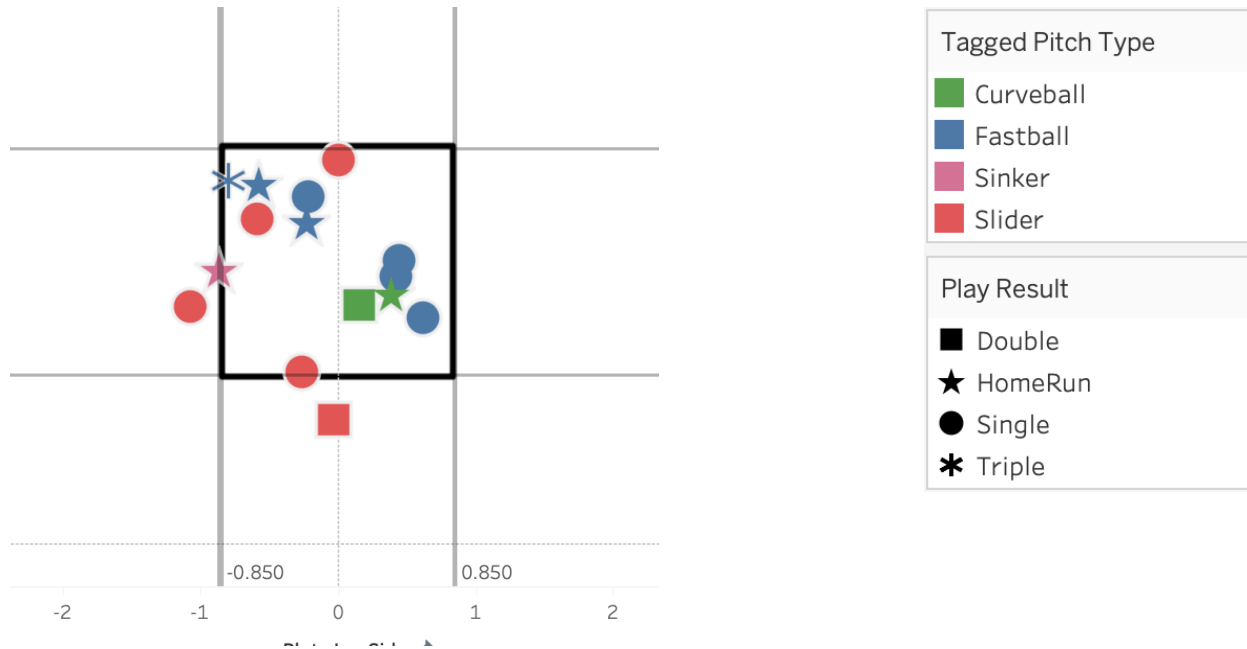
Strikeout Data:

This visualization highlights Caulfield's strikeout trends, including pitch locations and types.

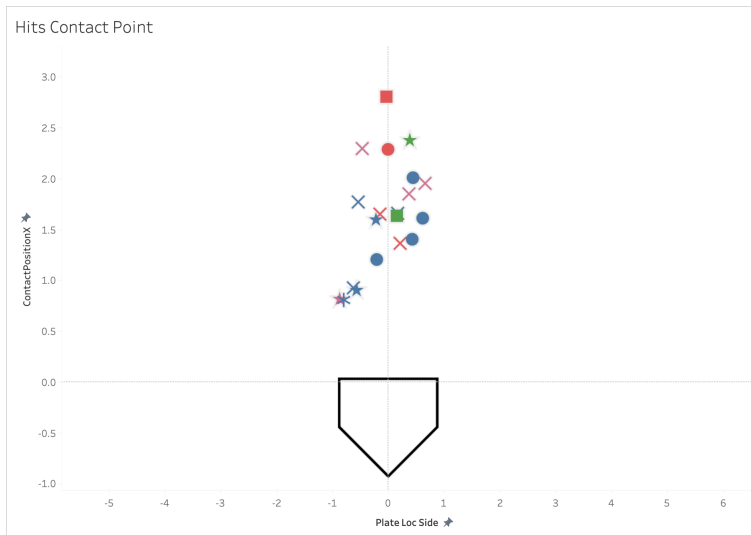
Notably, 4 out of 7 strikeouts were looking, while 3 out of 7 were against sliders. However, the data does not indicate a consistent pattern of chasing specific pitches, suggesting that these strikeouts may stem more from effective pitch placement or situational factors rather than a clear weakness in approach to any particular pitch type.

Important Note: 2 strikeouts are missing from this plot because of NULL data.

Hit Data:

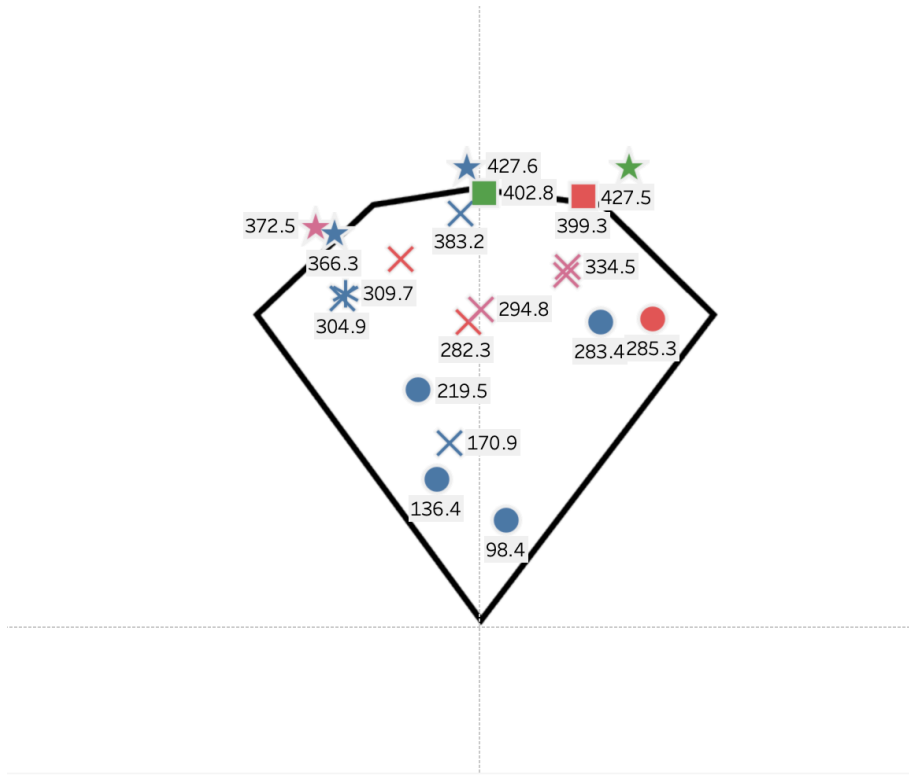


Caulfield's hits predominantly come from pitches within the strike zone, showcasing exceptional plate discipline and contact ability. With an average **exit speed** exceeding **100 mph**, his offensive performance is both powerful and consistent. Notably, **7 of his 15 hits** were against **fastballs** 2 of which being home runs, and he effectively capitalized on off-speed pitches left elevated in the zone. His success against left-handed pitchers, as highlighted earlier, further underscores his well-rounded offensive capabilities.



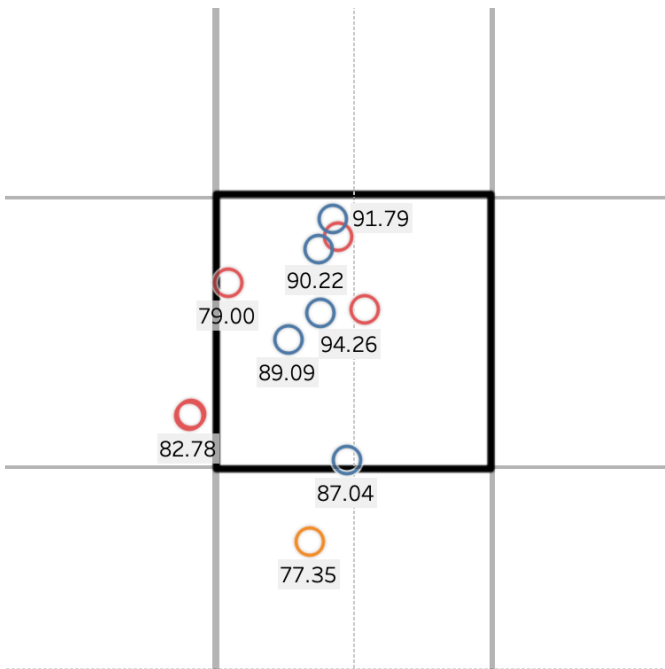
Hits Contact Point

Spray Chart



This spray chart provides a visualization of Caulfield's hitting distribution, highlighting his ability to effectively drive the ball to all areas of the field. The data reflects his well-rounded approach at the plate, demonstrating his capability to adjust to different pitch types and directions, making him a versatile and impactful hitter.

Swing and Miss Data:



Pitch Type	Swings	Whiff %	Chase %
ChangeUp	1.0	100.0	100.0
Curveball	3.0	0.0	33.33
Cutter	0.0	nan	nan
Fastball	19.0	26.32	0.0
Sinker	7.0	0.0	57.14
Slider	13.0	38.46	38.46

The strike zone chart highlights the **whiffs**, showing limited swinging outside the zone. **Whiff rates** are generally low, with the **Slider** having the highest at 38%, excluding the **ChangeUp**, since it had only one recorded swing. The numbers within the circles are the pitch speed.



Summary of Garen Caulfield's Hitting Performance

This report analyzes the performance of **Garen Caulfield**, focusing on his hitting tendencies and pitcher matchups across various situations. Key insights include his **batting average of .366**, **on-base percentage of .509**, and **slugging percentage of .756**, highlighting his elite hitting capabilities, with **4 home runs** and **10 walks** in **53 plate appearances**.

Caulfield excelled against **left-handed pitchers**, batting **.571** with a **slugging percentage of 1.571**. He performed well on **first-pitch fastballs** and capitalized on **hitter-friendly counts**, often producing high exit velocities exceeding **100 mph**. In disadvantageous counts, he found success against sliders, curveballs, and fastballs, showcasing adaptability. His **strikeout trends** indicate 4 of 7 were looking, with no clear pattern of weakness against specific pitch types.

The **spray chart** reflects his ability to hit to all fields, and his **swing-and-miss data** shows limited swinging outside the zone, with the **slider having the highest whiff rate (38%)**. This analysis provides actionable insights into Caulfield's strengths and areas for improvement, valuable for strategic decision-making.