

Pitcher Whiff Research

By Jack Cecil



Correlations by Pitch Type

TAGGED PITCH TYPE CORRELATION STRENGTH TO SWINGING STRIKES

| | FB | SI | CUT | SL | CB | CH | SPL |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|
| RELEASE SPEED | 0.056371 | 0.022168 | 0.008143 | 0.032976 | 0.068554 | 0.000746 | -0.00463 |
| ZONETIME | 0.058085 | 0.020129 | 0.006466 | -0.02993 | -0.06685 | 0.003478 | 0.002537 |
| SPIN RATE | 0.049284 | 0.019262 | -0.00392 | 0.009136 | 0.011528 | -0.00226 | -0.03757 |
| INDUCED VERTICAL BREAK | 0.060402 | 0.003205 | -0.05675 | -0.01333 | 0.010606 | -0.0378 | -0.06336 |
| HORIZONTAL BREAK | -0.0098 | -0.01537 | -0.02178 | -0.01537 | -0.00773 | -0.0065 | -0.01635 |
| VERTICAL APPROACH ANGLE | 0.125601 | 0.013094 | -0.04582 | -0.08189 | -0.09295 | -0.0821 | -0.1088 |
| HORIZONTAL APPROACH ANGLE | -0.00786 | 0.014381 | -0.01337 | -0.01081 | -0.02116 | -0.00705 | -0.02343 |



Swinging Strike Rates by Side

| | RHP | LHP | Total |
|-------|---------|---------|---------|
| RHH | 12.757% | 11.495% | 12.433% |
| LHH | 11.798% | 12.400% | 11.667% |
| Total | 12.173% | 11.969% | 12.113% |

RHP vs RHH Swing and Miss Breakdown

| TaggedPitchType | PitchCount | SwngStk | Velo | ZT | Spin | Vbreak | Hbreak | Vangle | Hangle | Extension | Axis |
|-----------------|------------|---------|--------|-------|------|--------|--------|--------|--------|-----------|---------|
| Fastball | 129466 | 9.90% | 93.684 | 0.403 | 2276 | 14.476 | 8.828 | -5.274 | -1.193 | 6.18 | 210.664 |
| Sinker | 21128 | 7.36% | 92.513 | 0.409 | 2142 | 7.639 | 14.984 | -6.123 | -0.559 | 6.113 | 243.258 |
| Cutter | 17076 | 13.55% | 88.763 | 0.426 | 2346 | 7.441 | -2.909 | -6.717 | -2.857 | 5.931 | 152.13 |
| Splitter | 4218 | 19.72% | 85.295 | 0.445 | 1374 | 4.246 | 9.647 | -8.017 | -0.595 | 5.938 | 242.276 |
| Slider | 68437 | 17.96% | 85.037 | 0.447 | 2258 | 1.921 | -5.541 | -7.848 | -3.238 | 5.786 | 117.373 |
| ChangeUp | 16237 | 17.33% | 84.967 | 0.445 | 1793 | 6.601 | 12.834 | -7.498 | -0.746 | 6.12 | 240.728 |
| Curveball | 23683 | 13.18% | 79.459 | 0.481 | 2502 | -8.528 | -9.804 | -9.51 | -3.414 | 5.734 | 56.42 |

RHP vs LHH Swing and Miss Breakdown

| TaggedPitchType | PitchCount | SwngStk | Velo | ZT | Spin | Vbreak | Hbreak | Vangle | Hangle | Extension | Axis |
|-----------------|------------|---------|--------|-------|------|--------|--------|--------|--------|-----------|---------|
| Fastball | 114801 | 9.38% | 93.661 | 0.403 | 2274 | 14.536 | 8.921 | -5.15 | -0.987 | 6.152 | 210.961 |
| Sinker | 14263 | 6.23% | 92.62 | 0.409 | 2142 | 7.894 | 15.117 | -6.111 | -0.312 | 6.053 | 242.496 |
| Cutter | 12539 | 11.55% | 89.304 | 0.424 | 2359 | 7.939 | -2.287 | -6.315 | -2.578 | 5.907 | 156.769 |
| ChangeUp | 35898 | 14.90% | 85.366 | 0.443 | 1772 | 6.871 | 13.449 | -7.326 | -0.273 | 6.093 | 242.562 |
| Splitter | 6293 | 17.16% | 85.291 | 0.445 | 1377 | 4.696 | 10.32 | -7.843 | -0.206 | 5.905 | 243.772 |
| Slider | 32021 | 15.78% | 84.967 | 0.448 | 2248 | 1.819 | -5.198 | -7.847 | -2.75 | 5.754 | 117.292 |
| Curveball | 23296 | 12.25% | 79.079 | 0.483 | 2511 | -9.118 | -9.541 | -9.642 | -2.871 | 5.666 | 54.676 |

LHP vs RHH Swing and Miss Breakdown

| TaggedPitchType | PitchCount | SwngStk | Velo | ZT | Spin | Vbreak | Hbreak | Vangle | Hangle | Extension | Axis |
|-----------------|------------|---------|--------|-------|------|--------|---------|--------|--------|-----------|---------|
| Fastball | 61209 | 9.35% | 92.017 | 0.411 | 2236 | 14.727 | -8.845 | -5.302 | 1.302 | 6.075 | 149.309 |
| Sinker | 12613 | 7.89% | 91.375 | 0.411 | 2129 | 9.742 | -13.993 | -5.92 | 0.925 | 6.036 | 123.297 |
| Cutter | 12084 | 11.39% | 87.391 | 0.433 | 2210 | 8.227 | 1.053 | -6.631 | 2.926 | 5.952 | 192.386 |
| Slider | 19035 | 16.67% | 83.286 | 0.456 | 2219 | 1.674 | 5.221 | -8.047 | 3.147 | 5.738 | 243.116 |
| ChangeUp | 24403 | 16.22% | 83.094 | 0.456 | 1853 | 7.764 | -13.917 | -7.492 | 0.435 | 5.982 | 121.807 |
| Splitter | 183 | 15.85% | 81.439 | 0.468 | 1569 | 8.815 | -9.813 | -7.691 | 1.256 | 5.841 | 131.571 |
| Curveball | 13799 | 12.46% | 76.948 | 0.498 | 2438 | -9.252 | 8.4 | -9.969 | 3.085 | 5.616 | 300.969 |

LHP vs LHH Swing and Miss Breakdown

| TaggedPitchType | PitchCount | SwngStk | Velo | ZT | Spin | Vbreak | Hbreak | Vangle | Hangle | Extension | Axis |
|-----------------|------------|---------|--------|-------|------|--------|---------|--------|--------|-----------|---------|
| Fastball | 24176 | 9.85% | 92.089 | 0.411 | 2243 | 14.549 | -8.555 | -5.442 | 1.555 | 6.091 | 149.913 |
| Sinker | 7150 | 7.86% | 91.114 | 0.415 | 2101 | 8.086 | -14.165 | -6.141 | 1.123 | 6.036 | 118.628 |
| Cutter | 4275 | 14.76% | 87.39 | 0.434 | 2245 | 7.331 | 1.649 | -7.052 | 3.316 | 5.855 | 199.083 |
| Slider | 12972 | 17.98% | 83.372 | 0.457 | 2217 | 1.895 | 5.418 | -7.949 | 3.598 | 5.747 | 242.973 |
| ChangeUp | 3023 | 17.47% | 82.451 | 0.46 | 1885 | 6.934 | -13.027 | -7.688 | 1.017 | 5.982 | 125.624 |
| Curveball | 5601 | 11.91% | 77.053 | 0.497 | 2432 | -7.88 | 9.473 | -9.639 | 3.711 | 5.602 | 297.994 |

Fastballs

| CORRELATION STRENGTH TO SWINGING STRIKES | |
|--|----------|
| RELEASE SPEED | 0.056371 |
| ZONETIME | 0.058085 |
| SPIN RATE | 0.049284 |
| INDUCED VERTICAL BREAK | 0.060402 |
| HORIZONTAL BREAK | -0.0098 |
| VERTICAL APPROACH ANGLE | 0.125601 |
| HORIZONTAL APPROACH ANGLE | -0.00786 |

Release Speed with Vertical Break

| Average of SwngStk | Column Labels | | | | | | | | |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | <87 | 87-89 | 89-91 | 91-93 | 93-95 | 95-97 | 97-99 | >99 | Grand Total |
| >20 | 3% | 6% | 10% | 12% | 17% | 21% | 22% | 17% | 15.0% |
| 18-20 | 3% | 7% | 8% | 11% | 13% | 16% | 19% | 18% | 12.3% |
| 16-18 | 5% | 6% | 8% | 10% | 11% | 14% | 15% | 16% | 10.7% |
| 14-16 | 5% | 7% | 7% | 8% | 10% | 11% | 12% | 15% | 9.4% |
| 12-14 | 5% | 7% | 6% | 7% | 9% | 9% | 11% | 12% | 8.2% |
| 10-12 | 6% | 5% | 6% | 7% | 7% | 8% | 9% | 11% | 7.0% |
| 8-10 | 7% | 6% | 7% | 6% | 7% | 8% | 9% | 4% | 6.7% |
| 6-8 | 11% | 8% | 7% | 6% | 7% | 7% | 9% | 7% | 6.8% |
| <6 | 11% | 9% | 8% | 8% | 8% | 8% | 7% | 21% | 8.3% |
| Grand Total | 6.3% | 6.7% | 7.2% | 8.4% | 9.7% | 12.1% | 13.4% | 14.5% | 9.6% |

Release Speed with Vertical Approach Angle

| Average of SwngStk | | Column Labels | | | | | | | |
|--------------------|-----|---------------|-------|-------|-------|-------|-------|-----|-------------|
| Row Labels | <87 | 87-89 | 89-91 | 91-93 | 93-95 | 95-97 | 97-99 | >99 | Grand Total |
| >-3.5 | | 11% | 7% | 7% | 7% | 10% | 14% | 15% | 22% 11% |
| -4--3.5 | | 10% | 10% | 11% | 15% | 17% | 21% | 22% | 20% 17% |
| -4.5--4 | | 8% | 11% | 14% | 16% | 16% | 19% | 20% | 20% 17% |
| -5--4.5 | | 8% | 10% | 10% | 12% | 13% | 14% | 16% | 16% 13% |
| -5.5--5 | | 6% | 7% | 7% | 8% | 9% | 10% | 10% | 8% 9% |
| -6--5.5 | | 5% | 5% | 6% | 6% | 6% | 6% | 6% | 6% 6% |
| -6.5--6 | | 4% | 4% | 4% | 4% | 5% | 4% | 5% | 3% 4% |
| -7--6.5 | | 5% | 4% | 4% | 4% | 4% | 5% | 4% | 4% 4% |
| <-7 | | 8% | 7% | 5% | 5% | 5% | 5% | 6% | 9% 6% |
| Grand Total | | 6% | 7% | 7% | 8% | 10% | 12% | 13% | 14% 10% |



Zone Time with Induced Vertical Break

| Average of SwngStk | Column Labels | >0.43 | 0.42-0.43 | 0.41-0.42 | 0.4-0.41 | 0.39-0.4 | 0.38-0.39 | <0.38 | Grand Total |
|--------------------|---------------|-------|-----------|-----------|----------|----------|-----------|-------|-------------|
| Row Labels | | | | | | | | | |
| >20 | | 5% | 9% | 12% | 16% | 21% | 23% | 16% | 15% |
| 18-20 | | 5% | 7% | 9% | 12% | 16% | 18% | 18% | 12% |
| 16-18 | | 6% | 7% | 8% | 10% | 13% | 15% | 16% | 11% |
| 14-16 | | 6% | 6% | 7% | 9% | 11% | 13% | 16% | 9% |
| 12-14 | | 6% | 6% | 7% | 8% | 9% | 11% | 13% | 8% |
| 10-12 | | 4% | 6% | 6% | 7% | 8% | 8% | 11% | 7% |
| 8-10 | | 6% | 6% | 7% | 6% | 7% | 10% | 8% | 7% |
| 6-8 | | 9% | 7% | 7% | 6% | 8% | 7% | 12% | 7% |
| <6 | | 10% | 8% | 8% | 7% | 8% | 8% | 10% | 8% |
| Grand Total | | 6% | 7% | 8% | 9% | 11% | 13% | 15% | 10% |

Zone Time with Vertical Approach Angle

| Average of SwngStk | Column Labels | >0.43 | 0.42-0.43 | 0.41-0.42 | 0.4-0.41 | 0.39-0.4 | 0.38-0.39 | <0.38 | Grand Total |
|--------------------|---------------|-------|-----------|-----------|----------|----------|-----------|-------|-------------|
| Row Labels | | | | | | | | | |
| >-3.5 | | 9% | 6% | 7% | 9% | 12% | 16% | 17% | 10.9% |
| -4--3.5 | | 10% | 11% | 13% | 16% | 20% | 22% | 24% | 17.5% |
| -4.5--4 | | 9% | 13% | 14% | 16% | 18% | 20% | 20% | 16.8% |
| -5--4.5 | | 10% | 10% | 11% | 13% | 14% | 15% | 15% | 13.0% |
| -5.5--5 | | 6% | 8% | 8% | 8% | 10% | 10% | 10% | 8.5% |
| -6--5.5 | | 5% | 5% | 6% | 6% | 6% | 6% | 7% | 5.8% |
| -6.5--6 | | 4% | 4% | 4% | 4% | 5% | 5% | 4% | 4.2% |
| -7--6.5 | | 4% | 5% | 4% | 4% | 5% | 3% | 6% | 4.2% |
| <-7 | | 7% | 6% | 5% | 5% | 5% | 5% | 6% | 5.6% |
| Grand Total | | 6.2% | 7.0% | 7.9% | 9.1% | 11.4% | 13.4% | 14.5% | 9.6% |



RHP vs RHH Zone Time with Induced Vertical Break

| Average of SwngStk | Column Labels | | | | | | | |
|--------------------|---------------|-----------|-----------|----------|----------|-----------|-------|--------------|
| Row Labels | >0.43 | 0.42-0.43 | 0.41-0.42 | 0.4-0.41 | 0.39-0.4 | 0.38-0.39 | <0.38 | Grand Total |
| >-3.5 | | 11% | 8% | 7% | 10% | 14% | 16% | 17% 12.1% |
| -4--3.5 | | 13% | 13% | 14% | 18% | 22% | 22% | 27% 19.6% |
| -4.5--4 | | 9% | 13% | 15% | 17% | 19% | 20% | 18% 17.5% |
| -5--4.5 | | 8% | 10% | 11% | 13% | 14% | 15% | 13% 13.3% |
| -5.5--5 | | 8% | 7% | 8% | 8% | 10% | 9% | 10% 8.6% |
| -6--5.5 | | 4% | 5% | 6% | 5% | 6% | 5% | 5% 5.4% |
| -6.5--6 | | 3% | 4% | 4% | 4% | 4% | 5% | 5% 4.4% |
| -7--6.5 | | 5% | 5% | 5% | 5% | 5% | 3% | 4% 4.8% |
| <-7 | | 8% | 8% | 6% | 6% | 6% | 5% | 0% 6.1% |
| Grand Total | 6.3% | 7.0% | 7.7% | 9.1% | 11.4% | 13.1% | 13.8% | 9.9% |



RHP vs LHH Zone Time with Induced Vertical Break

| Average of SwngStk | Column Labels | | | | | | | |
|--------------------|---------------|-----------|-----------|----------|----------|-----------|-------|-------------|
| Row Labels | >0.43 | 0.42-0.43 | 0.41-0.42 | 0.4-0.41 | 0.39-0.4 | 0.38-0.39 | <0.38 | Grand Total |
| >-3.5 | 9% | 5% | 6% | 7% | 11% | 14% | 20% | 9.9% |
| -4--3.5 | 9% | 10% | 11% | 14% | 18% | 22% | 20% | 16.0% |
| -4.5--4 | 7% | 11% | 12% | 15% | 17% | 19% | 20% | 15.6% |
| -5--4.5 | 11% | 9% | 11% | 12% | 14% | 15% | 17% | 12.5% |
| -5.5--5 | 4% | 6% | 7% | 7% | 10% | 10% | 8% | 8.2% |
| -6--5.5 | 6% | 5% | 5% | 6% | 6% | 6% | 9% | 5.7% |
| -6.5--6 | 5% | 4% | 3% | 4% | 5% | 5% | 3% | 4.1% |
| -7--6.5 | 4% | 5% | 4% | 3% | 4% | 3% | 4% | 3.5% |
| <-7 | 6% | 6% | 5% | 5% | 4% | 5% | 13% | 5.0% |
| Grand Total | 6.3% | 6.3% | 7.0% | 8.5% | 11.0% | 13.1% | 15.0% | 9.4% |



| Row Labels | >0.43 | 0.42-0.43 | 0.41-0.42 | 0.4-0.41 | 0.39-0.4 | 0.38-0.39 | <0.38 | Grand Total |
|-------------|-------|-----------|-----------|----------|----------|-----------|-------|-------------|
| >4 | 3% | 4% | 5% | 5% | 6% | 7% | 8% | 5% |
| 3.9-4 | 8% | 8% | 9% | 12% | 17% | 17% | 25% | 13% |
| 3.8-3.9 | 8% | 9% | 13% | 16% | 16% | 16% | 14% | 15% |
| 3.7-3.8 | 10% | 14% | 15% | 18% | 20% | 23% | 18% | 18% |
| 3.6-3.7 | 12% | 12% | 14% | 18% | 21% | 23% | 25% | 18% |
| 3.5-3.6 | 10% | 13% | 15% | 17% | 21% | 22% | 23% | 18% |
| 3.4-3.5 | 12% | 13% | 15% | 19% | 22% | 24% | 27% | 19% |
| 3.3-3.4 | 8% | 12% | 15% | 17% | 20% | 22% | 24% | 18% |
| 3.2-3.3 | 11% | 11% | 15% | 15% | 19% | 21% | 22% | 16% |
| 3.1-3.2 | 10% | 10% | 12% | 13% | 17% | 20% | 27% | 15% |
| 3-3.1 | 10% | 9% | 11% | 13% | 15% | 19% | 21% | 14% |
| 2.9-3 | 7% | 10% | 10% | 12% | 15% | 19% | 23% | 13% |
| 2.8-2.9 | 6% | 8% | 9% | 10% | 15% | 19% | 14% | 12% |
| 2.7-2.8 | 7% | 8% | 8% | 11% | 14% | 19% | 19% | 12% |
| 2.6-2.7 | 7% | 7% | 8% | 10% | 13% | 15% | 18% | 11% |
| 2.5-2.6 | 5% | 7% | 7% | 9% | 12% | 13% | 14% | 10% |
| 2.4-2.5 | 4% | 6% | 6% | 7% | 11% | 12% | 15% | 8% |
| 2.3-2.4 | 5% | 6% | 7% | 7% | 9% | 10% | 15% | 8% |
| 2.2-2.3 | 5% | 6% | 6% | 6% | 8% | 10% | 4% | 7% |
| 2.1-2.2 | 5% | 5% | 6% | 5% | 7% | 8% | 10% | 6% |
| 2-2.1 | 3% | 4% | 5% | 5% | 6% | 6% | 10% | 5% |
| 1.9-2 | 5% | 5% | 5% | 5% | 5% | 7% | 11% | 5% |
| 1.8-1.9 | 6% | 5% | 5% | 4% | 6% | 5% | 3% | 5% |
| 1.7-1.8 | 3% | 5% | 4% | 4% | 4% | 4% | 6% | 4% |
| 1.6-1.7 | 7% | 4% | 4% | 4% | 5% | 4% | 1% | 4% |
| 1.5-1.6 | 5% | 4% | 3% | 3% | 3% | 4% | 2% | 4% |
| 1.4-1.5 | 5% | 4% | 3% | 4% | 4% | 5% | 8% | 4% |
| 1.3-1.4 | 5% | 5% | 3% | 4% | 5% | 4% | 6% | 4% |
| 1.2-1.3 | 4% | 5% | 3% | 3% | 4% | 4% | 7% | 4% |
| 1.1-1.2 | 5% | 7% | 5% | 4% | 3% | 6% | 5% | 4% |
| 1-1.1 | 7% | 7% | 3% | 4% | 3% | 8% | 7% | 4% |
| <1 | 5% | 3% | 2% | 2% | 2% | 2% | 6% | 2% |
| Grand Total | 6% | 7% | 8% | 9% | 11% | 13% | 15% | 10% |

| Team | SwngStk | ZT | ZT Rank | Vangle | VA Rank |
|------|---------|-------|---------|--------|---------|
| TB | 12.84% | 0.399 | 2 | -5.083 | 8 |
| HOU | 11.62% | 0.402 | 3 | -5.187 | 10 |
| MIL | 11.15% | 0.405 | 13 | -5.142 | 9 |
| BOS | 10.97% | 0.406 | 18 | -5.016 | 4 |
| LAD | 10.93% | 0.404 | 10 | -4.993 | 1 |
| NYM | 10.87% | 0.398 | 1 | -4.999 | 2 |
| NYY | 10.65% | 0.403 | 8 | -5.052 | 6 |
| MIN | 10.49% | 0.405 | 13 | -5.367 | 26 |
| MIA | 10.27% | 0.406 | 18 | -5.048 | 5 |
| TEX | 10.02% | 0.405 | 13 | -5.337 | 23 |
| STL | 9.99% | 0.402 | 3 | -5.335 | 22 |
| CHC | 9.74% | 0.408 | 23 | -5.273 | 17 |
| WAS | 9.64% | 0.404 | 10 | -5.305 | 21 |
| SD | 9.62% | 0.404 | 10 | -5.234 | 12 |
| CLE | 9.40% | 0.405 | 13 | -5 | 3 |
| PIT | 9.38% | 0.403 | 8 | -5.297 | 20 |
| CIN | 9.28% | 0.402 | 3 | -5.055 | 7 |
| TOR | 9.21% | 0.406 | 18 | -5.237 | 14 |
| CWS | 9.09% | 0.402 | 3 | -5.552 | 28 |
| PHI | 9.09% | 0.408 | 23 | -5.203 | 11 |
| SF | 8.94% | 0.408 | 23 | -5.289 | 19 |
| OAK | 8.87% | 0.406 | 18 | -5.36 | 25 |
| BAL | 8.81% | 0.41 | 29 | -5.235 | 13 |
| DET | 8.66% | 0.408 | 23 | -5.284 | 18 |
| ARI | 8.43% | 0.408 | 23 | -5.396 | 27 |
| LAA | 8.26% | 0.407 | 22 | -5.252 | 15 |
| ATL | 8.25% | 0.409 | 28 | -5.603 | 30 |
| SEA | 8.24% | 0.412 | 30 | -5.264 | 16 |
| KC | 8.07% | 0.405 | 13 | -5.354 | 24 |
| COL | 7.44% | 0.402 | 3 | -5.59 | 29 |



Examples





Josh Hader 2019 Averages



- 23.9% Swinging Strike Rate on FB (1st)
- -3.667 Vertical Angle (4th)
- .391 Zone Time (49th quickest)
- 16.951 Induced Vertical Break (107th)
- 95.548 Release Velocity (101st fastest)
- 2113 Spin Rate (474th highest)

Min 100 FBs, 560 qualified pitchers

Curveballs

CORRELATION STRENGTH TO SWINGING STRIKES

| | |
|---------------------------|----------|
| RELEASE SPEED | 0.068554 |
| ZONETIME | -0.06685 |
| SPIN RATE | 0.011528 |
| INDUCED VERTICAL BREAK | 0.010606 |
| HORIZONTAL BREAK | -0.00773 |
| VERTICAL APPROACH ANGLE | -0.09295 |
| HORIZONTAL APPROACH ANGLE | -0.02116 |

Induced Vertical Break by Release Speed

| Average of SwngStk | Column Labels | <70 | 70-72 | 72-74 | 74-76 | 76-78 | 78-80 | 80-82 | 82-84 | 84-86 | >86 | Grand Total |
|--------------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Row Labels | | | | | | | | | | | | |
| >4 | | 5% | 8% | 18% | 8% | 8% | 8% | 12% | 21% | 13% | 32% | 12% |
| 2-4 | | 16% | 8% | 14% | 12% | 18% | 13% | 15% | 14% | 23% | 18% | 16% |
| 0-2 | | 10% | 0% | 11% | 6% | 8% | 15% | 14% | 15% | 24% | 18% | 14% |
| -2-0 | | 9% | 3% | 11% | 9% | 11% | 11% | 15% | 15% | 18% | 28% | 14% |
| -4--2 | | 5% | 4% | 14% | 12% | 8% | 13% | 13% | 17% | 17% | 29% | 14% |
| -6--4 | | 10% | 13% | 12% | 10% | 10% | 12% | 14% | 18% | 18% | 19% | 13% |
| -8--6 | | 6% | 10% | 13% | 7% | 11% | 11% | 14% | 17% | 20% | 13% | 13% |
| -10--8 | | 10% | 11% | 10% | 7% | 10% | 12% | 13% | 18% | 17% | 20% | 12% |
| -12--10 | | 19% | 11% | 9% | 8% | 10% | 12% | 13% | 16% | 19% | 20% | 12% |
| -14--12 | | 12% | 12% | 7% | 10% | 11% | 11% | 14% | 17% | 17% | 27% | 12% |
| -16--14 | | 12% | 9% | 8% | 9% | 10% | 10% | 15% | 19% | 20% | 28% | 11% |
| -18--16 | | 21% | 9% | 11% | 11% | 12% | 10% | 14% | 16% | 17% | 0% | 12% |
| -20--18 | | 45% | 13% | 14% | 15% | 16% | 12% | 17% | 21% | 23% | 50% | 16% |
| <-20 | | 25% | 12% | 11% | 18% | 18% | 9% | 14% | 46% | 14% | | 16% |
| Grand Total | | 12% | 10% | 11% | 10% | 11% | 12% | 14% | 17% | 19% | 23% | 13% |

Vertical Approach Angle by Release Speed

Average of SwngStk Column Labels ▾

| Row Labels | <70 | 70-72 | 72-74 | 74-76 | 76-78 | 78-80 | 80-82 | 82-84 | 84-86 | >86 | Grand Total |
|--------------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------------------|
| >-7 | | 6% | 7% | 18% | 6% | 3% | 4% | 5% | 8% | 10% | 16% 7% |
| -7.5--7 | | 7% | 6% | 8% | 2% | 2% | 6% | 6% | 10% | 13% | 11% 7% |
| -8--7.5 | | 0% | 0% | 7% | 2% | 3% | 5% | 7% | 10% | 13% | 23% 7% |
| -8.5--8 | | 3% | 8% | 5% | 4% | 4% | 6% | 9% | 10% | 13% | 22% 8% |
| -9--8.5 | | 2% | 5% | 7% | 4% | 6% | 8% | 11% | 14% | 18% | 23% 9% |
| -9.5--9 | | 3% | 4% | 9% | 5% | 7% | 11% | 14% | 18% | 23% | 26% 12% |
| -10--9.5 | | 4% | 7% | 7% | 6% | 11% | 14% | 17% | 22% | 19% | 19% 13% |
| -10.5--10 | | 7% | 6% | 7% | 11% | 13% | 17% | 19% | 24% | 29% | 33% 16% |
| -11--10.5 | | 12% | 12% | 11% | 11% | 17% | 17% | 19% | 28% | 28% | 31% 17% |
| -11.5--11 | | 13% | 13% | 12% | 17% | 19% | 15% | 21% | 21% | 25% | 34% 18% |
| -12--11.5 | | 23% | 20% | 19% | 17% | 17% | 14% | 17% | 23% | 24% | 24% 18% |
| <-12 | | 21% | 19% | 16% | 14% | 11% | 10% | 13% | 13% | 19% | 12% 14% |
| Grand Total | | 12% | 10% | 11% | 10% | 11% | 12% | 14% | 17% | 19% | 23% 13% |



Vertical Approach Angle by Horizontal Approach Angle from RHP

| Average of SwngStk | Column Labels | Row Labels | | | | | | | | | | | | | | |
|--------------------|---------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|------|-------------|
| | <-6 | -6--5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | >0 | | Grand Total |
| >-7.5 | | 15% | 20% | 13% | 11% | 10% | 8% | 5% | 6% | 6% | 4% | 2% | 2% | 2% | 0% | 7.0% |
| -8--7.5 | | 12% | 4% | 11% | 10% | 11% | 8% | 6% | 6% | 7% | 2% | 3% | 3% | 4% | 4% | 6.5% |
| -8.5--8 | | 18% | 10% | 16% | 16% | 13% | 8% | 7% | 5% | 4% | 5% | 6% | 5% | 4% | 2% | 7.8% |
| -9--8.5 | | 17% | 13% | 22% | 15% | 12% | 9% | 10% | 9% | 8% | 6% | 7% | 3% | 8% | 5% | 9.8% |
| -9.5--9 | | 19% | 17% | 24% | 21% | 20% | 14% | 13% | 10% | 7% | 6% | 7% | 6% | 5% | 5% | 12.2% |
| -10--9.5 | | 12% | 15% | 22% | 21% | 21% | 18% | 13% | 13% | 9% | 11% | 8% | 11% | 5% | 5% | 14.2% |
| -10.5--10 | | 7% | 13% | 18% | 21% | 20% | 20% | 18% | 19% | 12% | 12% | 14% | 9% | 13% | 12% | 16.7% |
| -11--10.5 | | 6% | 16% | 13% | 17% | 17% | 19% | 18% | 18% | 16% | 18% | 16% | 14% | 5% | 11% | 17.0% |
| -11.5--11 | | 2% | 14% | 10% | 15% | 18% | 20% | 21% | 18% | 19% | 15% | 14% | 18% | 20% | 0% | 17.5% |
| -12--11.5 | | 3% | 5% | 6% | 11% | 14% | 16% | 19% | 26% | 25% | 21% | 11% | 10% | 22% | 0% | 16.9% |
| <-12 | | 2% | 2% | 2% | 9% | 12% | 16% | 15% | 14% | 19% | 21% | 14% | 15% | 10% | 17% | 13.2% |
| Grand Total | | 12.5% | 12.9% | 15.4% | 16.2% | 16.4% | 14.9% | 13.5% | 13.0% | 10.6% | 9.4% | 8.0% | 7.2% | 6.9% | 4.1% | 12.7% |



RHP Correlations for Platoon Splits

| | |
|---------------|--------------|
| Vert Movement | 0.045187514 |
| Vert Angle | -0.09056933 |
| Horz Movement | 0.000549636 |
| Horz Angle | -0.071188226 |
| Pitch Height | -0.001715786 |



For Determining Platoon Splits Horizontal Movement vs Angle

RHP vs RHH

| | |
|---------------|----------|
| Horz Movement | -0.01871 |
| Horz Angle | -0.05907 |

RHP vs LHH

| | |
|---------------|----------|
| Horz Movement | 0.021204 |
| Horz Angle | -0.08156 |



Release Speed by Vertical Approach RHP vs RHH

| Average of SwngStk | Column Labels | <70 | 70-72 | 72-74 | 74-76 | 76-78 | 78-80 | 80-82 | 82-84 | 84-86 | >86 | Grand Total |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | | | | | | | | | | | | |
| >-7 | | 11% | 5% | 20% | 9% | 6% | 5% | 5% | 11% | 9% | 13% | 8.4% |
| -7.5--7 | | 0% | 0% | 0% | 4% | 4% | 7% | 7% | 11% | 15% | 12% | 8.4% |
| -8--7.5 | | 0% | 0% | 12% | 0% | 3% | 6% | 8% | 11% | 12% | 20% | 8.0% |
| -8.5--8 | | 0% | 13% | 7% | 5% | 6% | 6% | 10% | 11% | 11% | 26% | 9.0% |
| -9--8.5 | | 7% | 0% | 8% | 7% | 7% | 8% | 12% | 14% | 17% | 24% | 11.1% |
| -9.5--9 | | 5% | 0% | 14% | 8% | 7% | 11% | 14% | 19% | 24% | 24% | 13.3% |
| -10--9.5 | | 0% | 7% | 9% | 6% | 11% | 14% | 16% | 19% | 17% | 19% | 14.0% |
| -10.5--10 | | 12% | 8% | 10% | 11% | 14% | 19% | 17% | 18% | 30% | 24% | 16.4% |
| -11--10.5 | | 13% | 12% | 17% | 10% | 18% | 15% | 17% | 28% | 26% | 26% | 17.6% |
| -11.5--11 | | 13% | 17% | 10% | 16% | 19% | 17% | 19% | 17% | 26% | 33% | 17.5% |
| -12--11.5 | | 31% | 15% | 23% | 17% | 18% | 10% | 13% | 24% | 17% | 20% | 16.6% |
| <-12 | | 17% | 24% | 11% | 15% | 10% | 13% | 9% | 15% | 15% | 20% | 13.3% |
| Grand Total | | 13.9% | 12.5% | 13.0% | 9.8% | 10.9% | 11.9% | 13.3% | 16.1% | 17.8% | 21.6% | 13.2% |



Horizontal Approach by Vertical Approach RHP by RHH

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | |
|--------------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|-------------|-------|
| Row Labels | <-6 | -6--5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | >0 | Grand Total | |
| >-7 | | 20% | 27% | 12% | 14% | 10% | 11% | 5% | 2% | 6% | 4% | 1% | 2% | 3% | 0% | 8.4% |
| -7.5--7 | | 10% | 21% | 11% | 9% | 13% | 9% | 10% | 11% | 5% | 2% | 0% | 0% | 4% | 0% | 8.4% |
| -8--7.5 | | 12% | 7% | 14% | 12% | 13% | 11% | 7% | 7% | 4% | 2% | 0% | 7% | 9% | 0% | 8.0% |
| -8.5--8 | | 19% | 8% | 17% | 15% | 16% | 9% | 8% | 6% | 4% | 3% | 2% | 9% | 7% | 0% | 9.0% |
| -9--8.5 | | 14% | 14% | 21% | 17% | 12% | 9% | 12% | 10% | 8% | 6% | 9% | 5% | 11% | 0% | 11.1% |
| -9.5--9 | | 19% | 16% | 25% | 21% | 19% | 15% | 13% | 10% | 6% | 7% | 8% | 9% | 3% | 0% | 13.3% |
| -10--9.5 | | 13% | 10% | 20% | 22% | 18% | 18% | 12% | 13% | 8% | 9% | 8% | 11% | 4% | 0% | 14.0% |
| -10.5--10 | | 5% | 14% | 15% | 21% | 21% | 17% | 17% | 18% | 12% | 11% | 18% | 10% | 19% | 13% | 16.4% |
| -11--10.5 | | 5% | 18% | 13% | 18% | 18% | 19% | 19% | 17% | 17% | 21% | 17% | 15% | 7% | 18% | 17.6% |
| -11.5--11 | | 0% | 12% | 10% | 19% | 19% | 19% | 20% | 18% | 21% | 16% | 19% | 16% | 14% | 0% | 17.5% |
| -12--11.5 | | 3% | 4% | 7% | 12% | 14% | 16% | 18% | 27% | 27% | 23% | 10% | 7% | 22% | 0% | 16.6% |
| <-12 | | 3% | 3% | 1% | 7% | 9% | 16% | 16% | 16% | 23% | 20% | 19% | 23% | 25% | | 13.3% |
| Grand Total | | 12.1% | 12.8% | 15.2% | 16.9% | 16.2% | 14.9% | 13.8% | 12.9% | 10.4% | 8.4% | 8.5% | 8.3% | 9.0% | 2.4% | 13.2% |

Release Speed by Vertical Approach

RHP vs LHH

| Average of SwngStk | Column Labels | <70 | 70-72 | 72-74 | 74-76 | 76-78 | 78-80 | 80-82 | 82-84 | 84-86 | >86 | Grand Total |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | | | | | | | | | | | | |
| >-7 | | 4% | 18% | 14% | 2% | 1% | 2% | 3% | 4% | 11% | 19% | 5.0% |
| -7.5--7 | | 0% | 0% | 7% | 3% | 0% | 5% | 5% | 9% | 6% | 5% | 4.9% |
| -8--7.5 | | 0% | 0% | 0% | 2% | 2% | 3% | 4% | 7% | 14% | 29% | 4.8% |
| -8.5--8 | | 9% | 0% | 0% | 4% | 4% | 5% | 7% | 9% | 14% | 15% | 6.6% |
| -9--8.5 | | 0% | 0% | 3% | 3% | 7% | 6% | 9% | 13% | 15% | 24% | 8.4% |
| -9.5--9 | | 0% | 6% | 3% | 4% | 7% | 10% | 13% | 17% | 20% | 31% | 11.1% |
| -10--9.5 | | 3% | 0% | 5% | 4% | 10% | 12% | 19% | 25% | 23% | 21% | 14.3% |
| -10.5--10 | | 4% | 3% | 5% | 9% | 13% | 15% | 21% | 30% | 26% | 43% | 17.1% |
| -11--10.5 | | 8% | 11% | 4% | 10% | 16% | 16% | 19% | 25% | 32% | 39% | 16.5% |
| -11.5--11 | | 12% | 11% | 10% | 16% | 20% | 15% | 20% | 24% | 23% | 35% | 17.5% |
| -12--11.5 | | 19% | 25% | 16% | 12% | 14% | 16% | 18% | 18% | 35% | 27% | 17.1% |
| <-12 | | 23% | 21% | 16% | 13% | 11% | 9% | 10% | 12% | 24% | 5% | 13.1% |
| Grand Total | | 10.9% | 10.7% | 7.8% | 7.7% | 10.0% | 10.1% | 13.3% | 17.7% | 19.6% | 24.9% | 12.3% |



Horizontal Approach by Vertical Approach RHP by LHH

| Average of SwngStk | Column Labels | Row Labels | | | | | | | | | | | | | | |
|--------------------|---------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|------|-------|
| | <-6 | -6--5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | >0 | | |
| >-7 | | 6% | 10% | 21% | 17% | 9% | 4% | 4% | 4% | 3% | 6% | 0% | 2% | 2% | 0% | 5.0% |
| -7.5--7 | | 25% | 7% | 13% | 0% | 9% | 5% | 0% | 5% | 7% | 6% | 5% | 2% | 0% | 0% | 4.9% |
| -8--7.5 | | 13% | 0% | 2% | 6% | 8% | 4% | 4% | 5% | 10% | 2% | 4% | 1% | 2% | 5% | 4.8% |
| -8.5--8 | | 17% | 17% | 14% | 18% | 8% | 7% | 7% | 4% | 3% | 7% | 7% | 3% | 2% | 3% | 6.6% |
| -9--8.5 | | 22% | 13% | 24% | 11% | 11% | 9% | 7% | 8% | 8% | 7% | 6% | 2% | 7% | 7% | 8.4% |
| -9.5--9 | | 18% | 22% | 23% | 22% | 23% | 12% | 12% | 9% | 8% | 5% | 5% | 7% | 7% | 7% | 11.1% |
| -10--9.5 | | 10% | 25% | 25% | 18% | 27% | 16% | 14% | 13% | 10% | 13% | 8% | 10% | 6% | 7% | 14.3% |
| -10.5--10 | | 13% | 13% | 23% | 21% | 18% | 24% | 18% | 20% | 12% | 13% | 13% | 9% | 8% | 11% | 17.1% |
| -11--10.5 | | 10% | 13% | 14% | 15% | 16% | 19% | 18% | 19% | 15% | 16% | 16% | 14% | 3% | 8% | 16.5% |
| -11.5--11 | | 7% | 19% | 10% | 8% | 17% | 21% | 21% | 19% | 18% | 15% | 10% | 20% | 24% | 0% | 17.5% |
| -12--11.5 | | 0% | 7% | 4% | 10% | 13% | 16% | 19% | 24% | 23% | 20% | 12% | 12% | 21% | 0% | 17.1% |
| <-12 | | 0% | 0% | 4% | 12% | 15% | 15% | 13% | 12% | 16% | 21% | 10% | 10% | 0% | 17% | 13.1% |
| Grand Total | | 13.7% | 13.1% | 15.9% | 15.0% | 16.7% | 14.9% | 13.3% | 13.0% | 10.7% | 10.0% | 7.8% | 6.5% | 5.8% | 4.7% | 12.3% |



Vertical Approach Angle by Pitch Height

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | Grand Total |
|--------------------|---------------|---------|---------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-------|-------|--------------------|-------------|
| Row Labels | >-7 | -7.5--7 | -8--7.5 | -8.5--8 | -9--8.5 | -9.5--9 | -10--9.5 | -10.5--10 | -11--10.5 | -11.5--11 | -12--11.5 | <-12 | | | |
| >3.1 | | 4% | 4% | 3% | 1% | 1% | 1% | 2% | 0% | 0% | 0% | 0% | 0% | 2.3% | |
| 2.9-3.1 | | 8% | 9% | 3% | 5% | 3% | 4% | 0% | 1% | 4% | 0% | 0% | 0% | 3.9% | |
| 2.7-2.9 | | 12% | 7% | 6% | 3% | 5% | 4% | 3% | 2% | 6% | 0% | 0% | 0% | 4.8% | |
| 2.5-2.7 | | 11% | 6% | 7% | 6% | 5% | 4% | 2% | 2% | 4% | 5% | 12% | 0% | 4.8% | |
| 2.3-2.5 | | 11% | 10% | 6% | 6% | 7% | 5% | 5% | 6% | 5% | 10% | 8% | 25% | 6.4% | |
| 2.1-2.3 | | 8% | 10% | 9% | 9% | 8% | 7% | 6% | 8% | 8% | 10% | 19% | 13% | 7.8% | |
| 1.9-2.1 | | 17% | 10% | 12% | 10% | 12% | 10% | 10% | 11% | 11% | 9% | 15% | 29% | 10.8% | |
| 1.7-1.9 | | 18% | 24% | 16% | 14% | 15% | 13% | 12% | 13% | 13% | 15% | 23% | 27% | 14.0% | |
| 1.5-1.7 | | 17% | 15% | 11% | 21% | 19% | 19% | 17% | 19% | 17% | 18% | 19% | 27% | 18.3% | |
| 1.3-1.5 | | 13% | 21% | 22% | 20% | 20% | 23% | 24% | 21% | 22% | 19% | 25% | 25% | 22.1% | |
| 1.1-1.3 | | 0% | 29% | 19% | 24% | 18% | 26% | 25% | 25% | 23% | 23% | 23% | 21% | 23.7% | |
| 0.9-1.1 | | 0% | 0% | 20% | 21% | 25% | 29% | 26% | 26% | 23% | 22% | 19% | 26% | 24.3% | |
| 0.7-0.9 | | 0% | | 0% | 17% | 25% | 28% | 26% | 26% | 21% | 19% | 18% | 23% | 22.4% | |
| 0.5-0.7 | | 0% | | 0% | 33% | 20% | 32% | 22% | 21% | 21% | 20% | 18% | 16% | 20.3% | |
| <0.5 | | 14% | | | 0% | 25% | 17% | 18% | 18% | 15% | 13% | 10% | 13.4% | | |
| Grand Total | | 7.1% | 6.8% | 6.5% | 7.5% | 9.4% | 11.6% | 13.3% | 15.9% | 17.1% | 17.5% | 17.6% | 13.8% | 12.6% ₁ | |

| Team | SwngStk | Velo | Velo Rk | Vangle | Angle Rk |
|------|---------|--------|---------|---------|----------|
| NYY | 17.02% | 80.995 | 2 | -8.744 | 30 |
| TB | 16.63% | 79.057 | 10 | -9.703 | 13 |
| ATL | 15.18% | 76.929 | 27 | -9.944 | 6 |
| CLE | 15.07% | 78.636 | 17 | -9.643 | 18 |
| PIT | 14.14% | 81.15 | 1 | -9.813 | 11 |
| HOU | 14.05% | 78.943 | 11 | -10.49 | 1 |
| OAK | 13.91% | 74.968 | 30 | -10.433 | 2 |
| SD | 13.78% | 78.487 | 19 | -9.204 | 26 |
| BOS | 13.77% | 80.314 | 4 | -9.895 | 8 |
| ARI | 13.53% | 78.887 | 13 | -9.834 | 10 |
| CIN | 13.02% | 80.637 | 3 | -9.147 | 27 |
| PHI | 13.02% | 78.386 | 21 | -9.671 | 16 |
| WAS | 12.99% | 79.558 | 8 | -9.146 | 28 |
| SF | 12.87% | 78.67 | 16 | -9.213 | 25 |
| COL | 12.70% | 78.874 | 14 | -9.799 | 12 |
| MIA | 12.48% | 80.085 | 5 | -8.748 | 29 |
| CHC | 12.36% | 76.359 | 29 | -10.027 | 4 |
| LAA | 12.33% | 78.047 | 22 | -9.495 | 21 |
| MIN | 12.24% | 78.813 | 15 | -9.35 | 23 |
| NYM | 11.96% | 79.693 | 7 | -9.282 | 24 |
| TEX | 11.82% | 79.795 | 6 | -9.647 | 17 |
| DET | 11.18% | 78.447 | 20 | -9.604 | 20 |
| KC | 10.74% | 78.929 | 12 | -9.475 | 22 |
| STL | 10.51% | 77.051 | 26 | -10.391 | 3 |
| LAD | 10.46% | 76.567 | 28 | -9.954 | 5 |
| TOR | 10.43% | 77.67 | 24 | -9.862 | 9 |
| BAL | 9.58% | 77.871 | 23 | -9.674 | 15 |
| SEA | 9.34% | 77.069 | 25 | -9.605 | 19 |
| CWS | 9.28% | 79.48 | 9 | -9.703 | 13 |
| MIL | 8.62% | 78.532 | 18 | -9.9 | 7 |



Examples





Shane Bieber 2019 Averages



- 26.2% swinging strike rate (1st)
- 81.9 Release Speed (27th hardest)
- -10.138 Vertical Approach Angle (68th steepest)
- -13.786 Vertical Break (36th highest)
- 2283 Spin Rate (147 fastest)

Minimum 100 CB, 200 qualified



Blake Snell 2019 Averages



- 23.8% Swinging Strike Rate (4th best)
- -11.04 Vertical Approach Angle (10th steepest)
- 80.897 Release Speed (53rd hardest)
- -8.013 Vertical Break (136th most)
- 2467 Spin Rate (147th fastest)

Minimum 100 CB, 200 qualified

Sliders

CORRELATION STRENGTH TO SWINGING STRIKES

| | |
|---------------------------|----------|
| RELEASE SPEED | 0.032976 |
| ZONETIME | -0.02993 |
| SPIN RATE | 0.009136 |
| INDUCED VERTICAL BREAK | -0.01333 |
| HORIZONTAL BREAK | -0.01537 |
| VERTICAL APPROACH ANGLE | -0.08189 |
| HORIZONTAL APPROACH ANGLE | -0.01081 |



Induced Vertical Break by Release Speed

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| Row Labels | <78 | 78-79 | 79-80 | 80-81 | 81-82 | 82-83 | 83-84 | 84-85 | 85-86 | 86-87 | 87-88 | 88-89 | 89-90 | >90 | Grand Total | |
| >9 | | 12% | 16% | 21% | 17% | 17% | 15% | 17% | 15% | 13% | 12% | 11% | 15% | 12% | 12% | 13.6% |
| 8-9 | | 11% | 17% | 9% | 9% | 25% | 14% | 16% | 16% | 15% | 15% | 17% | 17% | 14% | 16% | 15.6% |
| 7-8 | | 18% | 15% | 14% | 19% | 19% | 20% | 18% | 18% | 14% | 17% | 17% | 15% | 15% | 13% | 16.1% |
| 6-7 | | 13% | 22% | 13% | 18% | 16% | 17% | 19% | 18% | 15% | 17% | 18% | 15% | 17% | 17% | 16.8% |
| 5-6 | | 14% | 9% | 15% | 13% | 19% | 16% | 13% | 15% | 18% | 18% | 19% | 18% | 20% | 19% | 17.3% |
| 4-5 | | 13% | 19% | 16% | 17% | 16% | 17% | 18% | 16% | 19% | 17% | 18% | 18% | 22% | 20% | 17.7% |
| 3-4 | | 13% | 11% | 15% | 16% | 18% | 16% | 17% | 17% | 17% | 19% | 19% | 19% | 18% | 19% | 17.6% |
| 2-3 | | 12% | 12% | 16% | 15% | 13% | 17% | 19% | 18% | 18% | 19% | 19% | 22% | 24% | 22% | 18.4% |
| 1-2 | | 11% | 10% | 12% | 16% | 17% | 15% | 18% | 18% | 18% | 19% | 21% | 21% | 22% | 22% | 17.9% |
| 0-1 | | 12% | 14% | 15% | 16% | 16% | 17% | 18% | 16% | 19% | 20% | 22% | 19% | 22% | 25% | 17.9% |
| -1-0 | | 10% | 13% | 14% | 15% | 16% | 18% | 19% | 19% | 17% | 19% | 22% | 23% | 30% | 22% | 18.1% |
| -2--1 | | 13% | 13% | 14% | 16% | 16% | 16% | 16% | 18% | 17% | 19% | 20% | 22% | 25% | 20% | 17.2% |
| -3--2 | | 9% | 15% | 16% | 15% | 15% | 18% | 19% | 18% | 22% | 20% | 22% | 21% | 27% | 18% | 18.1% |
| <-3 | | 13% | 12% | 15% | 15% | 16% | 16% | 17% | 19% | 19% | 21% | 21% | 24% | 21% | 23% | 16.9% |
| Grand Total | | 12.2% | 13.2% | 15.1% | 15.5% | 16.1% | 16.5% | 17.5% | 17.4% | 17.7% | 18.3% | 18.7% | 18.8% | 19.6% | 17.2% | 17.3% |



Vertical Approach Angle by Release Speed

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| Row Labels | <78 | 78-79 | 79-80 | 80-81 | 81-82 | 82-83 | 83-84 | 84-85 | 85-86 | 86-87 | 87-88 | 88-89 | 89-90 | >90 | Grand Total | |
| >-5.5 | | 14% | 13% | 13% | 11% | 13% | 5% | 5% | 7% | 7% | 10% | 10% | 12% | 11% | 13% | 10.7% |
| -6--5.5 | | 6% | 21% | 7% | 11% | 9% | 10% | 8% | 10% | 12% | 13% | 12% | 11% | 11% | 12% | 11.1% |
| -6.5--6 | | 11% | 8% | 14% | 13% | 11% | 10% | 11% | 13% | 13% | 11% | 12% | 14% | 13% | 14% | 12.2% |
| -7--6.5 | | 12% | 13% | 11% | 11% | 11% | 11% | 12% | 11% | 12% | 14% | 14% | 15% | 15% | 18% | 13.1% |
| -7.5--7 | | 10% | 9% | 9% | 12% | 13% | 14% | 13% | 14% | 14% | 14% | 17% | 16% | 19% | 22% | 14.5% |
| -8--7.5 | | 10% | 10% | 10% | 13% | 12% | 13% | 15% | 17% | 18% | 19% | 20% | 22% | 25% | 23% | 16.8% |
| -8.5--8 | | 10% | 13% | 14% | 15% | 16% | 16% | 18% | 20% | 21% | 24% | 24% | 26% | 29% | 21% | 19.9% |
| -9--8.5 | | 13% | 14% | 19% | 17% | 18% | 20% | 24% | 22% | 23% | 26% | 27% | 25% | 26% | 23% | 21.8% |
| -9.5--9 | | 14% | 16% | 20% | 20% | 20% | 23% | 26% | 25% | 26% | 25% | 26% | 22% | 21% | 17% | 22.9% |
| -10--9.5 | | 17% | 19% | 22% | 21% | 25% | 25% | 23% | 23% | 22% | 22% | 17% | 18% | 19% | 15% | 22.1% |
| <-10 | | 14% | 17% | 20% | 18% | 18% | 18% | 19% | 18% | 15% | 14% | 15% | 15% | 13% | 2% | 17.2% |
| Grand Total | | 12.2% | 13.2% | 15.1% | 15.5% | 16.1% | 16.5% | 17.5% | 17.4% | 17.7% | 18.3% | 18.7% | 18.8% | 19.6% | 17.2% | 17.3% |



RHP Correlations for Platoons

| | |
|---------------|----------|
| Vert Movement | -0.01335 |
| Vert Angle | -0.07912 |
| Horz Movement | 0.002271 |
| Horz Angle | -0.05563 |
| Pitch Height | -0.10753 |



Vertical Approach Angle by Horizontal Approach Angle RHP

| Average of SwngStk | Column Labels | Row Labels | | | | | | | | | | | | | | |
|--------------------|---------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|------|------|-------|
| | <-5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | 0--0.5 | >0.5 | | |
| >-5.5 | | 15% | 22% | 11% | 14% | 11% | 9% | 10% | 11% | 10% | 7% | 3% | 5% | 8% | 3% | 9.9% |
| -6--5.5 | | 17% | 11% | 22% | 12% | 13% | 11% | 12% | 12% | 10% | 7% | 6% | 2% | 9% | 8% | 11.1% |
| -6.5--6 | | 18% | 19% | 15% | 15% | 17% | 16% | 13% | 11% | 10% | 9% | 8% | 6% | 4% | 7% | 12.9% |
| -7--6.5 | | 22% | 20% | 18% | 19% | 16% | 14% | 14% | 10% | 9% | 9% | 9% | 5% | 9% | 10% | 13.4% |
| -7.5--7 | | 20% | 20% | 23% | 20% | 18% | 16% | 15% | 12% | 9% | 9% | 8% | 6% | 9% | 10% | 15.0% |
| -8--7.5 | | 16% | 20% | 21% | 21% | 19% | 16% | 15% | 12% | 10% | 8% | 8% | 6% | 5% | 5% | 17.0% |
| -8.5--8 | | 18% | 20% | 20% | 19% | 25% | 22% | 22% | 18% | 18% | 12% | 11% | 9% | 15% | 7% | 20.0% |
| -9--8.5 | | 14% | 17% | 18% | 22% | 25% | 24% | 22% | 22% | 23% | 18% | 17% | 12% | 20% | 20% | 21.7% |
| -9.5--9 | | 14% | 15% | 19% | 21% | 24% | 26% | 26% | 24% | 23% | 20% | 20% | 4% | 20% | 0% | 22.5% |
| -10--9.5 | | 13% | 10% | 16% | 21% | 22% | 26% | 23% | 28% | 26% | 18% | 19% | 8% | 0% | 10% | 21.8% |
| <-10 | | 6% | 6% | 12% | 15% | 18% | 21% | 21% | 17% | 24% | 19% | 16% | 6% | 20% | 25% | 16.8% |
| Grand Total | | 15.7% | 17.0% | 18.7% | 19.6% | 20.7% | 19.3% | 17.7% | 15.7% | 14.3% | 11.2% | 10.0% | 6.7% | 9.5% | 8.7% | 17.3% |

Vertical Approach Angle by Horizontal Approach Angle RHP vs LHH

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | | |
|--------------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|------|-------------|-------|--|
| Row Labels | <-5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | 0--0.5 | >0.5 | Grand Total | | |
| >-5.5 | | 13% | 5% | 3% | 8% | 9% | 10% | 10% | 11% | 11% | 6% | 4% | 5% | 11% | 0% | 8.7% | |
| -6--5.5 | | 0% | 18% | 14% | 8% | 10% | 11% | 12% | 13% | 10% | 7% | 3% | 4% | 0% | 15% | 9.9% | |
| -6.5--6 | | 26% | 14% | 11% | 8% | 10% | 14% | 12% | 8% | 12% | 10% | 7% | 6% | 3% | 12% | 10.5% | |
| -7--6.5 | | 24% | 17% | 13% | 13% | 11% | 10% | 11% | 10% | 11% | 9% | 8% | 3% | 3% | 11% | 10.5% | |
| -7.5--7 | | 18% | 13% | 18% | 16% | 16% | 14% | 12% | 12% | 9% | 9% | 7% | 5% | 9% | 6% | 12.1% | |
| -8--7.5 | | 22% | 22% | 20% | 22% | 21% | 18% | 14% | 11% | 10% | 9% | 7% | 6% | 3% | 10% | 14.9% | |
| -8.5--8 | | 24% | 23% | 19% | 19% | 25% | 21% | 19% | 15% | 17% | 9% | 7% | 8% | 20% | 8% | 18.1% | |
| -9--8.5 | | 18% | 20% | 23% | 23% | 27% | 23% | 20% | 18% | 21% | 18% | 15% | 10% | 18% | 10% | 21.1% | |
| -9.5--9 | | 10% | 11% | 21% | 22% | 29% | 24% | 28% | 24% | 20% | 21% | 16% | 0% | 20% | 0% | 23.1% | |
| -10--9.5 | | 11% | 8% | 22% | 26% | 24% | 26% | 24% | 29% | 28% | 18% | 15% | 15% | 0% | 13% | 24.0% | |
| <-10 | | 9% | 12% | 12% | 16% | 18% | 21% | 19% | 20% | 24% | 22% | 11% | 10% | 13% | 33% | 18.3% | |
| Grand Total | | 17.1% | 16.3% | 18.0% | 18.7% | 20.2% | 18.3% | 16.3% | 14.4% | 14.3% | 11.1% | 8.2% | 5.9% | 8.4% | 9.4% | 15.8% | |



Vertical Approach Angle by Horizontal Approach Angle RHP vs RHH

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | |
|--------------------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|-------|-------------|-------|
| Row Labels | <-5.5 | -5.5--5 | -5--4.5 | -4.5--4 | -4--3.5 | -3.5--3 | -3--2.5 | -2.5--2 | -2--1.5 | -1.5--1 | -1--0.5 | -0.5--0 | 0--0.5 | >0.5 | Grand Total | |
| >-5.5 | | 15% | 26% | 14% | 16% | 12% | 9% | 9% | 11% | 8% | 8% | 3% | 5% | 6% | 8% | 10.7% |
| -6--5.5 | | 20% | 10% | 24% | 14% | 14% | 11% | 12% | 12% | 10% | 7% | 10% | 0% | 18% | 0% | 11.8% |
| -6.5--6 | | 17% | 20% | 17% | 17% | 19% | 17% | 13% | 13% | 9% | 8% | 10% | 6% | 5% | 0% | 14.0% |
| -7--6.5 | | 22% | 20% | 19% | 21% | 18% | 16% | 15% | 10% | 8% | 9% | 9% | 8% | 19% | 9% | 14.7% |
| -7.5--7 | | 20% | 22% | 25% | 21% | 19% | 16% | 16% | 13% | 9% | 9% | 9% | 8% | 10% | 15% | 16.3% |
| -8--7.5 | | 15% | 20% | 21% | 21% | 20% | 19% | 17% | 17% | 14% | 11% | 10% | 10% | 10% | 0% | 17.9% |
| -8.5--8 | | 17% | 19% | 20% | 19% | 25% | 22% | 24% | 19% | 19% | 14% | 14% | 10% | 6% | 7% | 20.9% |
| -9--8.5 | | 13% | 17% | 17% | 22% | 24% | 24% | 23% | 25% | 24% | 18% | 19% | 14% | 21% | 30% | 22.1% |
| -9.5--9 | | 15% | 16% | 19% | 21% | 23% | 26% | 25% | 23% | 26% | 19% | 23% | 11% | 20% | 0% | 22.3% |
| -10--9.5 | | 13% | 11% | 15% | 20% | 21% | 26% | 22% | 26% | 25% | 17% | 24% | 0% | 0% | 0% | 20.7% |
| <-10 | | 6% | 5% | 12% | 15% | 18% | 21% | 22% | 15% | 25% | 17% | 21% | 0% | 50% | 17% | 16.0% |
| Grand Total | | 15.4% | 17.2% | 18.9% | 19.9% | 20.8% | 19.7% | 18.4% | 16.5% | 14.3% | 11.3% | 11.9% | 7.7% | 10.7% | 7.6% | 18.0% |

| PitcherTeam | SwngStk | Velo | Column | Vangle | Vangle | Vangle |
|-------------|---------|--------|--------|--------|--------|--------|
| WAS | 22.99% | 84.05 | 19 | -8.337 | | 3 |
| ARI | 20.14% | 83.157 | 26 | -8.632 | | 1 |
| HOU | 19.38% | 85.243 | 9 | -7.855 | | 19 |
| CLE | 19.21% | 82.543 | 30 | -7.868 | | 16 |
| STL | 19.19% | 85.077 | 10 | -7.866 | | 17 |
| MIN | 19.13% | 83.634 | 24 | -8.267 | | 4 |
| PIT | 19.10% | 85.021 | 11 | -8.089 | | 7 |
| CIN | 19.01% | 86.032 | 3 | -7.591 | | 27 |
| LAD | 18.93% | 85.691 | 5 | -7.706 | | 24 |
| COL | 17.57% | 85.981 | 4 | -7.86 | | 18 |
| ATL | 17.36% | 84.237 | 17 | -8.377 | | 2 |
| BOS | 17.25% | 83.002 | 28 | -7.793 | | 21 |
| TB | 17.08% | 86.382 | 2 | -7.974 | | 9 |
| TOR | 16.99% | 84.545 | 15 | -7.967 | | 10 |
| SF | 16.91% | 83.811 | 22 | -7.827 | | 20 |
| SEA | 16.78% | 85.609 | 7 | -7.518 | | 29 |
| SD | 16.78% | 85.247 | 8 | -7.701 | | 25 |
| DET | 16.71% | 83.135 | 27 | -7.879 | | 14 |
| LAA | 16.51% | 84.886 | 12 | -8.067 | | 8 |
| NYM | 16.50% | 88.979 | 1 | -6.903 | | 30 |
| MIA | 16.26% | 83.896 | 21 | -7.72 | | 22 |
| MIL | 16.13% | 83.699 | 23 | -7.708 | | 23 |
| CHC | 16.11% | 82.932 | 29 | -7.653 | | 26 |
| CWS | 15.50% | 84.391 | 16 | -8.156 | | 5 |
| KC | 15.36% | 83.932 | 20 | -8.141 | | 6 |
| NYY | 15.15% | 83.18 | 25 | -7.873 | | 15 |
| BAL | 14.90% | 84.081 | 18 | -7.912 | | 13 |
| TEX | 14.72% | 84.564 | 14 | -7.952 | | 12 |
| OAK | 14.68% | 84.809 | 13 | -7.962 | | 11 |
| PHI | 14.12% | 85.647 | 6 | -7.527 | | 28 |



Examples





Corbin Burnes 2019 Averages



- 34.7% Swinging Strike Rate (1st)
- -7.84 Vertical Approach Angle (191st steepest)
- 87.907 Release Speed (44th hardest)
- 0.707 Vertical Break (126th most)
- 2199 Spin Rate (207th fastest)

Minimum 100 SL, 357 qualified

Change Ups

CORRELATION STRENGTH TO SWINGING STRIKES

| | |
|---------------------------|----------|
| RELEASE SPEED | 0.000746 |
| ZONETIME | 0.003478 |
| SPIN RATE | -0.00226 |
| INDUCED VERTICAL BREAK | -0.0378 |
| HORIZONTAL BREAK | -0.0065 |
| VERTICAL APPROACH ANGLE | -0.0821 |
| HORIZONTAL APPROACH ANGLE | -0.00705 |



Release Speed by Induced Vertical Break

| Average of SwngStk Column Labels ▾ | | | | | | | | | | | | | | | | | | |
|------------------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | Column Labels | <77 | 77-78 | 78-79 | 79-80 | 80-81 | 81-82 | 82-83 | 83-84 | 84-85 | 85-86 | 86-87 | 87-88 | 88-89 | 89-90 | 90-91 | >91 | Grand Total |
| >15 | | 16% | 15% | 14% | 14% | 17% | 15% | 17% | 15% | 11% | 8% | 12% | 2% | 7% | 13% | 7% | 13% | 13.0% |
| 14-15 | | 16% | 5% | 20% | 10% | 14% | 16% | 19% | 11% | 14% | 12% | 13% | 13% | 13% | 25% | 3% | 5% | 13.7% |
| 13-14 | | 12% | 15% | 13% | 14% | 21% | 19% | 17% | 13% | 14% | 14% | 15% | 16% | 8% | 10% | 17% | 15% | 14.8% |
| 12-13 | | 19% | 16% | 12% | 14% | 20% | 18% | 13% | 17% | 15% | 13% | 15% | 11% | 11% | 7% | 22% | 4% | 14.3% |
| 11-12 | | 18% | 19% | 19% | 14% | 17% | 22% | 16% | 15% | 12% | 12% | 15% | 13% | 14% | 19% | 12% | 10% | 15.1% |
| 10-11 | | 19% | 15% | 19% | 16% | 20% | 15% | 15% | 15% | 17% | 13% | 15% | 13% | 11% | 10% | 12% | 8% | 15.0% |
| 9-10 | | 15% | 17% | 17% | 20% | 14% | 15% | 13% | 18% | 16% | 16% | 12% | 14% | 11% | 13% | 15% | 11% | 15.0% |
| 8-9 | | 18% | 12% | 18% | 19% | 17% | 17% | 15% | 15% | 15% | 14% | 13% | 13% | 14% | 10% | 19% | 15% | 14.9% |
| 7-8 | | 11% | 12% | 16% | 20% | 16% | 12% | 14% | 16% | 16% | 16% | 18% | 14% | 16% | 13% | 15% | 15% | 15.5% |
| 6-7 | | 21% | 7% | 19% | 16% | 19% | 15% | 15% | 18% | 15% | 18% | 16% | 13% | 15% | 16% | 15% | 11% | 15.8% |
| 5-6 | | 8% | 16% | 23% | 16% | 17% | 14% | 17% | 18% | 14% | 16% | 17% | 14% | 15% | 13% | 16% | 17% | 15.8% |
| 4-5 | | 16% | 27% | 15% | 18% | 17% | 15% | 16% | 17% | 15% | 15% | 17% | 17% | 19% | 20% | 19% | 23% | 17.1% |
| 3-4 | | 24% | 23% | 19% | 15% | 15% | 17% | 15% | 13% | 18% | 19% | 19% | 18% | 19% | 23% | 12% | 24% | 17.8% |
| 2-3 | | 26% | 6% | 26% | 12% | 15% | 12% | 16% | 14% | 17% | 14% | 19% | 18% | 20% | 27% | 19% | 32% | 17.5% |
| 1-2 | | 12% | 17% | 19% | 15% | 18% | 11% | 16% | 17% | 15% | 18% | 20% | 20% | 23% | 22% | 22% | 22% | 18.3% |
| <1 | | 15% | 19% | 14% | 14% | 15% | 17% | 17% | 15% | 18% | 16% | 20% | 24% | 22% | 23% | 24% | 18% | 18.1% |
| Grand Total | | 15.8% | 15.1% | 17.4% | 16.2% | 17.1% | 15.9% | 15.4% | 15.7% | 15.7% | 15.2% | 16.3% | 15.4% | 16.4% | 17.1% | 16.5% | 16.1% | 15.9% |

Release Speed by Vertical Approach Angle

| Average of SwngStk | Column Labels | | | | | | | | | | | | | | | |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| Row Labels | <78 | 78-79 | 79-80 | 80-81 | 81-82 | 82-83 | 83-84 | 84-85 | 85-86 | 86-87 | 87-88 | 88-89 | 89-90 | >90 | Grand Total | |
| >-5 | | 7% | 0% | 0% | 3% | 0% | 2% | 2% | 3% | 4% | 7% | 2% | 4% | 9% | 6% | 4.1% |
| -5.5--5 | | 5% | 0% | 3% | 4% | 6% | 9% | 5% | 6% | 7% | 8% | 6% | 6% | 5% | 16% | 7.0% |
| -6--5.5 | | 4% | 7% | 3% | 10% | 8% | 7% | 8% | 9% | 8% | 9% | 8% | 9% | 9% | 11% | 8.4% |
| -6.5--6 | | 5% | 10% | 6% | 9% | 8% | 9% | 9% | 10% | 10% | 12% | 12% | 12% | 17% | 13% | 10.7% |
| -7--6.5 | | 8% | 8% | 11% | 14% | 12% | 13% | 10% | 12% | 14% | 17% | 13% | 17% | 18% | 19% | 13.6% |
| -7.5--7 | | 12% | 18% | 14% | 17% | 18% | 15% | 16% | 16% | 16% | 19% | 18% | 18% | 19% | 20% | 16.9% |
| -8--7.5 | | 18% | 15% | 19% | 20% | 21% | 19% | 20% | 18% | 18% | 19% | 19% | 22% | 23% | 20% | 19.2% |
| -8.5--8 | | 21% | 23% | 24% | 22% | 20% | 20% | 22% | 22% | 21% | 20% | 21% | 21% | 26% | 20% | 21.4% |
| -9--8.5 | | 21% | 24% | 21% | 23% | 19% | 20% | 21% | 23% | 20% | 17% | 19% | 20% | 14% | 10% | 20.3% |
| -9.5--9 | | 13% | 16% | 12% | 13% | 19% | 17% | 15% | 16% | 13% | 16% | 14% | 14% | 13% | 15% | 15.0% |
| -10--9.5 | | 12% | 18% | 8% | 13% | 10% | 19% | 16% | 11% | 8% | 6% | 8% | 12% | 5% | 5% | 11.3% |
| <-10 | | 15% | 19% | 16% | 12% | 12% | 9% | 8% | 12% | 7% | 11% | 0% | 0% | 5% | 0% | 10.8% |
| Grand Total | | 15.5% | 17.4% | 16.2% | 17.1% | 15.9% | 15.4% | 15.7% | 15.7% | 15.2% | 16.3% | 15.4% | 16.4% | 17.1% | 16.4% | 15.9% |



Zone Time by Vertical Approach Angle

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------|-------------|
| Row Labels | <0.41 | 0.41-0.42 | 0.42-0.43 | 0.43-0.44 | 0.44-0.45 | 0.45-0.46 | 0.46-0.47 | 0.47-0.48 | 0.48-0.49 | >0.49 | Grand Total |
| >-5 | 7% | 7% | 5% | 5% | 2% | 2% | 1% | 0% | 0% | 0% | 4.1% |
| -5.5--5 | 16% | 9% | 7% | 7% | 6% | 7% | 5% | 3% | 0% | 8% | 7.0% |
| -6--5.5 | 6% | 11% | 8% | 8% | 9% | 8% | 7% | 7% | 4% | 4% | 8.4% |
| -6.5--6 | 15% | 15% | 13% | 11% | 11% | 9% | 9% | 8% | 9% | 4% | 10.7% |
| -7--6.5 | 16% | 19% | 15% | 15% | 14% | 12% | 12% | 13% | 8% | 7% | 13.6% |
| -7.5--7 | 21% | 20% | 17% | 17% | 17% | 16% | 16% | 18% | 15% | 13% | 16.9% |
| -8--7.5 | 21% | 23% | 20% | 19% | 18% | 20% | 19% | 20% | 16% | 19% | 19.2% |
| -8.5--8 | 20% | 26% | 20% | 21% | 22% | 22% | 19% | 23% | 23% | 20% | 21.4% |
| -9--8.5 | 15% | 14% | 19% | 18% | 20% | 23% | 18% | 23% | 22% | 23% | 20.3% |
| -9.5--9 | 0% | 12% | 14% | 14% | 15% | 16% | 17% | 15% | 13% | 14% | 15.0% |
| -10--9.5 | 20% | 5% | 6% | 10% | 7% | 16% | 17% | 11% | 11% | 15% | 11.3% |
| <-10 | 0% | 0% | 2% | 7% | 6% | 9% | 12% | 16% | 15% | 17% | 10.8% |
| Grand Total | 16.2% | 17.6% | 15.7% | 15.4% | 15.7% | 16.2% | 15.2% | 17.4% | 15.9% | 16.6% | 15.9% |



RHP vs RHH Horizontal Approach Angle by Vertical Approach Angle

| Average of SwngStk | Column Labels | Grand Total | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------|-------------|---------|-----------|-----------|-----------|---------|---------|-----------|-----------|-----------|---------|--------|----------|----------|----------|-----|-------------|-----|--|--|
| Row Labels | <-2.2 | -2.2--2 | -2--1.8 | -1.8--1.6 | -1.6--1.4 | -1.4--1.2 | -1.2--1 | -1--0.8 | -0.8--0.6 | -0.6--0.4 | -0.4--0.2 | -0.2--0 | 0--0.2 | 0.2--0.4 | 0.4--0.6 | 0.6--0.8 | >1 | Grand Total | | | |
| >-6 | | 3% | 4% | 11% | 9% | 16% | 14% | 3% | 9% | 7% | 10% | 14% | 7% | 6% | 5% | 3% | 4% | 5% | 7% | | |
| -6.5--6 | | 6% | 6% | 26% | 10% | 15% | 10% | 11% | 14% | 14% | 8% | 17% | 12% | 11% | 18% | 15% | 6% | 7% | 12% | | |
| -7--6.5 | | 9% | 12% | 15% | 13% | 21% | 17% | 18% | 17% | 13% | 15% | 15% | 16% | 15% | 12% | 16% | 18% | 11% | 14% | | |
| -7.5--7 | | 15% | 18% | 20% | 12% | 20% | 20% | 19% | 23% | 19% | 17% | 22% | 22% | 19% | 20% | 17% | 18% | 17% | 19% | | |
| -8--7.5 | | 15% | 20% | 23% | 20% | 24% | 15% | 24% | 27% | 25% | 27% | 25% | 25% | 20% | 22% | 24% | 24% | 16% | 22% | | |
| -8.5--8 | | 17% | 25% | 29% | 22% | 25% | 27% | 29% | 28% | 28% | 21% | 24% | 30% | 24% | 21% | 29% | 30% | 21% | 25% | | |
| -9--8.5 | | 15% | 13% | 15% | 19% | 21% | 26% | 19% | 22% | 21% | 22% | 24% | 20% | 19% | 24% | 24% | 26% | 26% | 20% | | |
| <-9 | | 7% | 11% | 9% | 12% | 10% | 13% | 9% | 12% | 12% | 12% | 16% | 18% | 15% | 19% | 9% | 7% | 18% | 12% | | |
| Grand Total | | 13% | 16% | 20% | 16% | 20% | 19% | 19% | 20% | 19% | 18% | 20% | 19% | 17% | 17% | 17% | 17% | 14% | 17% | | |



RHP vs LHH Horizontal Approach Angle by Vertical Approach Angle

| Average of SwngStk | Column Labels | Grand Total | | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------|-------------|---------|-----------|-----------|-----------|---------|---------|-----------|-----------|-----------|---------|--------|----------|----------|----------|--------|--------|----------|-------|-------------|-------|
| Row Labels | <-2.2 | -2.2--2 | -2--1.8 | -1.8--1.6 | -1.6--1.4 | -1.4--1.2 | -1.2--1 | -1--0.8 | -0.8--0.6 | -0.6--0.4 | -0.4--0.2 | -0.2--0 | 0--0.2 | 0.2--0.4 | 0.4--0.6 | 0.6--0.8 | 0.8--1 | 1--1.2 | 1.2--1.4 | >1.4 | Grand Total | |
| >-6 | | 9% | 7% | 6% | 5% | 12% | 4% | 9% | 8% | 7% | 6% | 11% | 11% | 9% | 8% | 8% | 8% | 7% | 6% | 5% | 3% | 7.2% |
| -6.5--6 | | 9% | 3% | 4% | 7% | 12% | 13% | 8% | 12% | 9% | 13% | 14% | 11% | 9% | 13% | 13% | 13% | 8% | 10% | 8% | 7% | 10.6% |
| -7--6.5 | | 10% | 14% | 14% | 15% | 16% | 15% | 12% | 14% | 15% | 14% | 15% | 17% | 11% | 14% | 14% | 11% | 14% | 10% | 13% | 10% | 13.5% |
| -7.5--7 | | 9% | 15% | 15% | 14% | 14% | 12% | 16% | 17% | 17% | 15% | 15% | 17% | 19% | 13% | 18% | 15% | 17% | 17% | 14% | 15% | 15.6% |
| -8--7.5 | | 10% | 13% | 16% | 16% | 18% | 19% | 17% | 22% | 19% | 20% | 20% | 17% | 18% | 17% | 19% | 22% | 13% | 17% | 14% | 13% | 17.5% |
| -8.5--8 | | 9% | 20% | 16% | 20% | 15% | 23% | 21% | 24% | 23% | 19% | 18% | 23% | 20% | 18% | 19% | 22% | 27% | 18% | 26% | 23% | 19.8% |
| -9--8.5 | | 14% | 16% | 18% | 18% | 20% | 19% | 19% | 23% | 26% | 24% | 22% | 23% | 22% | 16% | 16% | 23% | 27% | 22% | 20% | 22% | 20.5% |
| <-9 | | 10% | 9% | 8% | 7% | 14% | 12% | 11% | 12% | 13% | 20% | 18% | 17% | 9% | 15% | 10% | 17% | 13% | 20% | 26% | 30% | 13.8% |
| Grand Total | | 10.3% | 13.5% | 13.7% | 14.3% | 15.8% | 15.6% | 15.0% | 17.4% | 16.7% | 16.2% | 16.3% | 16.7% | 15.1% | 14.0% | 15.0% | 15.2% | 14.1% | 13.2% | 13.3% | 11.6% | 14.9% |



RHP vs RHH Horizontal Break by Vertical Approach Angle

| Average of SwngStk | Column Labels | <7 | 7-8 | 8-9 | 9-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | >17 | Grand Total | |
|--------------------|---------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| Row Labels | | | | | | | | | | | | | | | |
| >-6 | | | 10% | 5% | 4% | 2% | 6% | 11% | 9% | 8% | 7% | 4% | 8% | 7% | 7.1% |
| -6.5--6 | | | 9% | 5% | 6% | 17% | 12% | 11% | 9% | 9% | 13% | 14% | 12% | 16% | 11.8% |
| -7--6.5 | | | 11% | 17% | 5% | 14% | 18% | 16% | 17% | 13% | 14% | 11% | 19% | 17% | 14.5% |
| -7.5--7 | | | 17% | 14% | 23% | 19% | 18% | 18% | 18% | 21% | 19% | 18% | 21% | 19% | 19.0% |
| -8--7.5 | | | 16% | 15% | 23% | 21% | 20% | 17% | 30% | 23% | 26% | 19% | 21% | 22% | 21.5% |
| -8.5--8 | | | 23% | 26% | 24% | 20% | 25% | 20% | 25% | 24% | 25% | 28% | 25% | 26% | 24.6% |
| -9--8.5 | | | 21% | 19% | 20% | 5% | 21% | 17% | 26% | 22% | 22% | 20% | 16% | | 20.1% |
| <-9 | | | 12% | 13% | 13% | 11% | 10% | 8% | 11% | 15% | 14% | 12% | 12% | 9% | 11.6% |
| Grand Total | | | 14.9% | 15.0% | 15.9% | 14.8% | 17.2% | 15.5% | 19.3% | 17.9% | 19.1% | 16.8% | 18.4% | 18.0% | 17.3% |



RHP vs LHH Horizontal Break by Vertical Approach Angle

| Average of SwngStk | Column Labels | | | | | | | | | | | | |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | <7 | 7-8 | 8-9 | 9-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | >17 | Grand Total |
| >-6 | | 6% | 5% | 6% | 7% | 8% | 7% | 6% | 7% | 8% | 8% | 7% | 9% |
| -6.5--6 | | 6% | 6% | 6% | 9% | 12% | 9% | 9% | 9% | 12% | 12% | 14% | 13% |
| -7--6.5 | | 10% | 17% | 9% | 13% | 13% | 14% | 13% | 11% | 12% | 16% | 13% | 16% |
| -7.5--7 | | 11% | 13% | 16% | 11% | 17% | 12% | 15% | 14% | 16% | 16% | 17% | 20% |
| -8--7.5 | | 14% | 15% | 11% | 14% | 20% | 18% | 18% | 19% | 15% | 17% | 19% | 19% |
| -8.5--8 | | 17% | 12% | 23% | 17% | 19% | 18% | 22% | 19% | 19% | 20% | 23% | 21% |
| -9--8.5 | | 21% | 22% | 25% | 18% | 26% | 23% | 26% | 18% | 18% | 21% | 20% | 15% |
| <-9 | | 18% | 5% | 10% | 19% | 11% | 15% | 14% | 14% | 13% | 14% | 13% | 12% |
| Grand Total | | 12.5% | 11.8% | 13.2% | 12.5% | 15.7% | 13.8% | 15.4% | 14.0% | 14.4% | 15.9% | 16.1% | 16.7% |
| | | | | | | | | | | | | | 14.9% |

| PitcherTeam | SwngStk | Velo | Velo Rk | Vangle | Angle Rk |
|-------------|----------|--------|---------|--------|----------|
| CIN | 0.215702 | 86.961 | 1 | -7.051 | 29 |
| WAS | 0.195436 | 84.718 | 17 | -7.689 | 2 |
| LAD | 0.181112 | 83.403 | 25 | -7.556 | 7 |
| STL | 0.178336 | 85.13 | 8 | -7.623 | 5 |
| HOU | 0.176491 | 85.024 | 12 | -7.676 | 3 |
| CHC | 0.175755 | 83.201 | 26 | -7.672 | 4 |
| NYM | 0.172413 | 85.587 | 6 | -7.311 | 22 |
| NYY | 0.171943 | 86.623 | 2 | -7.064 | 28 |
| TB | 0.169515 | 84.416 | 18 | -7.546 | 8 |
| DET | 0.164673 | 83.721 | 24 | -7.541 | 9 |
| CWS | 0.164564 | 84.928 | 14 | -7.426 | 16 |
| ATL | 0.164319 | 83.734 | 23 | -7.319 | 21 |
| LAA | 0.163466 | 84.73 | 16 | -7.523 | 10 |
| MIN | 0.160785 | 83.922 | 20 | -7.47 | 13 |
| PHI | 0.160536 | 83.792 | 21 | -7.388 | 19 |
| MIL | 0.159383 | 81.724 | 30 | -7.507 | 11 |
| SD | 0.157223 | 82.991 | 28 | -7.983 | 1 |
| MIA | 0.153505 | 84.987 | 13 | -7.266 | 24 |
| BOS | 0.151565 | 85.094 | 9 | -7.419 | 17 |
| SEA | 0.15103 | 82.368 | 29 | -7.467 | 14 |
| TEX | 0.147028 | 85.672 | 4 | -6.961 | 30 |
| SF | 0.146046 | 85.046 | 10 | -7.251 | 25 |
| BAL | 0.144986 | 83.779 | 22 | -7.466 | 15 |
| COL | 0.140732 | 85.633 | 5 | -7.498 | 12 |
| OAK | 0.137108 | 82.992 | 27 | -7.359 | 20 |
| TOR | 0.136235 | 84.756 | 15 | -7.214 | 26 |
| ARI | 0.134404 | 85.495 | 7 | -7.584 | 6 |
| PIT | 0.1311 | 85.905 | 3 | -7.394 | 18 |
| KC | 0.128891 | 84.41 | 19 | -7.308 | 23 |
| CLE | 0.127398 | 85.043 | 11 | -7.088 | 27 |



Examples





Brandon Brennan 2019 Averages



- 29.7% Swinging Strike Rate (1st)
- -7.403 Vertical Angle (114th steepest)
- 16.461 Horizontal Break (17th most run)
- 5.855 Induced Vertical Break(79th most)
- -9.266 Difference from FB velocity
(136th largest difference)

Minimum 100 SL, 226 qualified

Splitters

(Only 30 pitchers threw over 100 splitters)



CORRELATION STRENGTH TO SWINGING STRIKES

| | |
|---------------------------|----------|
| RELEASE SPEED | -0.00463 |
| ZONETIME | 0.002537 |
| SPIN RATE | -0.03757 |
| INDUCED VERTICAL BREAK | -0.06336 |
| HORIZONTAL BREAK | -0.01635 |
| VERTICAL APPROACH ANGLE | -0.1088 |
| HORIZONTAL APPROACH ANGLE | -0.02343 |

Release Speed by Vertical Break

| Row Labels | Average of SwngStk Column Labels | | | | | | Grand Total |
|-------------|----------------------------------|-------|-------|-------|-------|-------|-------------|
| | <82 | 82-84 | 84-86 | 86-88 | >88 | | |
| >13 | | 19% | 13% | 16% | 14% | 4% | 13.7% |
| 12-13 | | 19% | 16% | 19% | 12% | 0% | 13.5% |
| 11-12 | | 25% | 16% | 15% | 16% | 7% | 14.9% |
| 10-11 | | 20% | 14% | 9% | 11% | 12% | 12.2% |
| 9-10 | | 20% | 17% | 15% | 7% | 12% | 13.2% |
| 8-9 | | 18% | 14% | 22% | 16% | 16% | 17.4% |
| 7-8 | | 17% | 15% | 15% | 14% | 13% | 14.5% |
| 6-7 | | 14% | 17% | 20% | 14% | 13% | 16.2% |
| 5-6 | | 25% | 15% | 17% | 16% | 15% | 16.6% |
| 4-5 | | 17% | 22% | 23% | 18% | 19% | 20.5% |
| 3-4 | | 15% | 21% | 20% | 21% | 21% | 20.2% |
| 2-3 | | 20% | 19% | 26% | 17% | 13% | 20.0% |
| 1-2 | | 10% | 18% | 23% | 17% | 26% | 19.3% |
| 0-1 | | 13% | 20% | 20% | 23% | 30% | 21.3% |
| -1-0 | | 18% | 23% | 25% | 24% | 16% | 22.7% |
| -2--1 | | 18% | 25% | 18% | 24% | 25% | 22.0% |
| <-2 | | 13% | 15% | 24% | 26% | 29% | 19.9% |
| Grand Total | | 16.4% | 18.0% | 19.9% | 17.9% | 16.1% | 18.1% |



Release Speed by Vertical Approach Angle

| Average of SwngStk | Column Labels | <82 | 82-83 | 83-84 | 84-85 | 85-86 | 86-87 | 87-88 | 88-89 | >89 | Grand Total |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| Row Labels | | 4% | 2% | 5% | 5% | 8% | 10% | 4% | 6% | 10% | |
| >-6 | | 4% | 2% | 5% | 5% | 8% | 10% | 4% | 6% | 10% | 6.7% |
| -6.5--6 | | 13% | 10% | 12% | 9% | 11% | 5% | 6% | 16% | 6% | 9.2% |
| -7--6.5 | | 13% | 12% | 15% | 14% | 13% | 9% | 10% | 13% | 7% | 11.5% |
| -7.5--7 | | 13% | 12% | 11% | 18% | 14% | 16% | 17% | 12% | 14% | 14.6% |
| -8--7.5 | | 14% | 16% | 15% | 23% | 20% | 22% | 26% | 20% | 17% | 20.0% |
| -8.5--8 | | 20% | 24% | 21% | 23% | 26% | 19% | 22% | 30% | 32% | 23.0% |
| -9--8.5 | | 19% | 26% | 27% | 24% | 27% | 27% | 24% | 23% | 20% | 24.6% |
| -9.5--9 | | 18% | 19% | 28% | 36% | 28% | 26% | 23% | 21% | 23% | 25.4% |
| <-9.5 | | 18% | 20% | 24% | 23% | 17% | 16% | 17% | 10% | 9% | 18.5% |
| Grand Total | | 16.4% | 17.1% | 18.6% | 20.8% | 19.0% | 17.7% | 18.1% | 17.9% | 14.1% | 18.1% |

RHP vs RHH Release Speed vs Vertical Approach Angle

| Average of SwngStk | Column Labels | | | | |
|--------------------|---------------|-------|-------|-------|-------------|
| Row Labels | <83 | 83-85 | 85-87 | >87 | Grand Total |
| >-7 | | 11% | 12% | 11% | 11% |
| -7.5--7 | | 15% | 18% | 18% | 21% |
| -8--7.5 | | 15% | 19% | 25% | 23% |
| -8.5--8 | | 20% | 23% | 26% | 28% |
| -9--8.5 | | 23% | 27% | 28% | 23% |
| <-9 | | 18% | 25% | 20% | 15% |
| Grand Total | | 17.5% | 21.0% | 20.8% | 18.7% |
| | | | | | 19.7% |

RHP vs LHH Release Speed vs Vertical Approach Angle

| Average of SwngStk | Column Labels | <82 | 82-84 | 84-86 | 86-88 | >88 | Grand Total |
|--------------------|---------------|-------|-------|-------|-------|-------|-------------|
| Row Labels | | 5% | 4% | 7% | 5% | 11% | 6.7% |
| >-6.5 | | 5% | 4% | 7% | 5% | 11% | 6.7% |
| -7--6.5 | | 12% | 13% | 14% | 8% | 6% | 10.7% |
| -7.5--7 | | 13% | 8% | 15% | 13% | 9% | 12.4% |
| -8--7.5 | | 13% | 15% | 21% | 20% | 21% | 19.1% |
| -8.5--8 | | 21% | 22% | 23% | 19% | 28% | 22.0% |
| -9--8.5 | | 15% | 27% | 24% | 27% | 19% | 23.7% |
| -9.5--9 | | 14% | 28% | 30% | 27% | 30% | 26.9% |
| <-9.5 | | 19% | 26% | 23% | 12% | 14% | 19.8% |
| Grand Total | | 14.7% | 17.6% | 19.5% | 15.6% | 15.6% | 17.2% |

| PitcherTeam | SwngStk | Velo | Velo Rk | Vangle | Angle Rk |
|-------------|----------|--------|---------|--------|----------|
| ATL | 0.226086 | 83.944 | 14 | -7.743 | 10 |
| PHI | 0.218566 | 85.824 | 9 | -8.107 | 8 |
| OAK | 0.217162 | 85.352 | 10 | -8.308 | 6 |
| ARI | 0.214432 | 83.86 | 17 | -8.78 | 1 |
| LAA | 0.211864 | 86.188 | 7 | -8.57 | 3 |
| LAD | 0.206703 | 86.377 | 6 | -7.071 | 20 |
| CIN | 0.197368 | 85.126 | 11 | -7.821 | 9 |
| TB | 0.196428 | 85.105 | 12 | -8.36 | 5 |
| SF | 0.192118 | 82.642 | 20 | -7.636 | 12 |
| KC | 0.191815 | 83.943 | 15 | -8.507 | 4 |
| CLE | 0.185654 | 82.173 | 21 | -8.644 | 2 |
| WAS | 0.179215 | 83.94 | 16 | -7.601 | 15 |
| SD | 0.177133 | 86.888 | 4 | -7.604 | 14 |
| TOR | 0.170868 | 83.787 | 18 | -7.436 | 18 |
| CHC | 0.155737 | 88.413 | 2 | -7.552 | 16 |
| SEA | 0.147465 | 84.269 | 13 | -7.71 | 11 |
| MIN | 0.144314 | 83.78 | 19 | -8.272 | 7 |
| MIL | 0.141975 | 85.954 | 8 | -7.492 | 17 |
| NYY | 0.12071 | 86.732 | 5 | -7.264 | 19 |
| NYM | 0.119106 | 88.778 | 1 | -7.021 | 21 |
| BOS | 0.114583 | 87.897 | 3 | -7.619 | 13 |



Examples





Touki Toussaint 2019 Averages



- 28.2% Swinging Strike Rate (1st)
- 86.206 Release Speed (13th fastest)
- 0.93 Induced Vertical Break (5th most)
- -7.574 Vertical Angle (22nd most)
- 1424 Spin (17th most)
- 0.432 Zone Time (5 quickest)
- 6.576ft Extension (1st)

Minimum 100 SPL, 30 qualified

Command

All from pitcher's perspective



Fastball RHP vs RHH

| Average of SwngStk Column Labels ▾ | | | | | | | | | | | | | |
|------------------------------------|---------------|------|----------|------------|------------|---------|--------|----------|----------|--------|------|-------------|--|
| Row Labels | Column Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total | |
| >4 | | 0% | 2% | 4% | 6% | 8% | 10% | 10% | 7% | 5% | 3% | 6.3% | |
| 3.8-4 | | 2% | 5% | 8% | 16% | 20% | 18% | 22% | 22% | 18% | 7% | 15.2% | |
| 3.6-3.8 | | 5% | 10% | 15% | 19% | 25% | 26% | 27% | 27% | 17% | 7% | 19.4% | |
| 3.4-3.6 | | 4% | 14% | 18% | 23% | 26% | 29% | 25% | 24% | 17% | 6% | 19.8% | |
| 3.2-3.4 | | 4% | 13% | 18% | 21% | 24% | 19% | 24% | 20% | 19% | 5% | 17.6% | |
| 3-3.2 | | 5% | 13% | 19% | 20% | 20% | 19% | 15% | 17% | 10% | 4% | 14.7% | |
| 2.8-3 | | 8% | 13% | 18% | 16% | 18% | 15% | 14% | 10% | 6% | 3% | 12.7% | |
| 2.6-2.8 | | 7% | 13% | 15% | 17% | 14% | 13% | 10% | 8% | 6% | 5% | 11.3% | |
| 2.4-2.6 | | 6% | 9% | 14% | 12% | 11% | 10% | 7% | 6% | 5% | 7% | 9.3% | |
| 2.2-2.4 | | 5% | 9% | 9% | 9% | 11% | 8% | 6% | 5% | 4% | 9% | 7.7% | |
| 2-2.2 | | 3% | 7% | 8% | 8% | 7% | 7% | 5% | 4% | 8% | 10% | 6.5% | |
| 1.8-2 | | 3% | 4% | 4% | 5% | 5% | 5% | 6% | 6% | 9% | 11% | 5.2% | |
| 1.6-1.8 | | 2% | 4% | 3% | 5% | 5% | 3% | 4% | 6% | 14% | 8% | 4.6% | |
| 1.4-1.6 | | 1% | 2% | 3% | 4% | 3% | 5% | 6% | 9% | 12% | 9% | 4.1% | |
| 1.2-1.4 | | 2% | 3% | 3% | 4% | 2% | 6% | 8% | 9% | 9% | 10% | 4.2% | |
| 1-1.2 | | 1% | 3% | 3% | 3% | 4% | 5% | 7% | 14% | 10% | 8% | 4.2% | |
| <1 | | 1% | 1% | 2% | 3% | 5% | 6% | 6% | 7% | 5% | 1% | 2.8% | |
| Grand Total | | 3.6% | 7.6% | 10.7% | 12.0% | 12.9% | 12.5% | 11.9% | 11.3% | 9.4% | 6.3% | 9.9% | |

Fastball RHP vs LHH

| Average of SwngStk | Column Labels | | | | | | | | | | | |
|--------------------|---------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total | |
| >4 | | 0% | 1% | 4% | 7% | 11% | 7% | 7% | 5% | 2% | 0% | 4.7% |
| 3.8-4 | | 2% | 5% | 8% | 15% | 23% | 23% | 20% | 9% | 6% | 1% | 12.2% |
| 3.6-3.8 | | 2% | 9% | 12% | 20% | 25% | 29% | 26% | 19% | 13% | 2% | 17.0% |
| 3.4-3.6 | | 3% | 5% | 16% | 22% | 26% | 27% | 25% | 20% | 13% | 4% | 17.2% |
| 3.2-3.4 | | 2% | 8% | 11% | 20% | 24% | 24% | 25% | 21% | 14% | 5% | 16.2% |
| 3-3.2 | | 1% | 7% | 12% | 14% | 18% | 19% | 21% | 20% | 16% | 5% | 14.1% |
| 2.8-3 | | 2% | 6% | 9% | 11% | 15% | 16% | 18% | 19% | 15% | 6% | 12.4% |
| 2.6-2.8 | | 2% | 4% | 8% | 11% | 10% | 15% | 18% | 18% | 15% | 6% | 11.3% |
| 2.4-2.6 | | 3% | 4% | 4% | 7% | 10% | 12% | 14% | 13% | 10% | 4% | 8.7% |
| 2.2-2.4 | | 2% | 4% | 4% | 5% | 8% | 10% | 9% | 10% | 8% | 4% | 7.0% |
| 2-2.2 | | 3% | 2% | 3% | 6% | 5% | 8% | 8% | 7% | 5% | 4% | 5.4% |
| 1.8-2 | | 3% | 5% | 2% | 4% | 4% | 6% | 6% | 5% | 6% | 3% | 4.4% |
| 1.6-1.8 | | 3% | 5% | 3% | 3% | 3% | 3% | 3% | 4% | 5% | 3% | 3.5% |
| 1.4-1.6 | | 2% | 2% | 3% | 5% | 5% | 5% | 3% | 4% | 4% | 2% | 3.6% |
| 1.2-1.4 | | 2% | 6% | 4% | 2% | 2% | 4% | 5% | 4% | 6% | 4% | 3.6% |
| 1-1.2 | | 2% | 4% | 4% | 7% | 6% | 3% | 4% | 4% | 5% | 1% | 4.1% |
| <1 | | 1% | 1% | 2% | 3% | 3% | 3% | 4% | 2% | 3% | 1% | 2.3% |
| Grand Total | | 2.3% | 4.7% | 6.7% | 9.8% | 12.1% | 13.3% | 13.8% | 12.6% | 9.8% | 3.8% | 9.4% |

Curveball RHP vs RHH

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total |
| >3.9 | 0% | 20% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 0.4% |
| 3.7-3.9 | 0% | 17% | 0% | 0% | 6% | 3% | 0% | 0% | 0% | 0% | 1.1% |
| 3.5-3.7 | 0% | 10% | 6% | 0% | 5% | 2% | 4% | 0% | 3% | 0% | 2.2% |
| 3.3-3.5 | 0% | 0% | 11% | 6% | 4% | 2% | 10% | 1% | 2% | 1% | 3.7% |
| 3.1-3.3 | 9% | 12% | 4% | 9% | 5% | 3% | 4% | 1% | 5% | 0% | 4.6% |
| 2.9-3.1 | 4% | 8% | 6% | 8% | 3% | 4% | 3% | 0% | 0% | 0% | 3.5% |
| 2.7-2.9 | 4% | 6% | 5% | 7% | 12% | 6% | 5% | 5% | 0% | 1% | 5.9% |
| 2.5-2.7 | 5% | 11% | 6% | 7% | 8% | 6% | 3% | 3% | 5% | 1% | 5.7% |
| 2.3-2.5 | 13% | 11% | 13% | 10% | 11% | 4% | 4% | 6% | 2% | 0% | 8.4% |
| 2.1-2.3 | 14% | 14% | 10% | 8% | 9% | 7% | 7% | 6% | 4% | 0% | 9.1% |
| 1.9-2.1 | 17% | 16% | 16% | 16% | 10% | 12% | 6% | 2% | 4% | 3% | 12.8% |
| 1.7-1.9 | 14% | 17% | 18% | 14% | 16% | 9% | 15% | 8% | 6% | 11% | 14.2% |
| 1.5-1.7 | 18% | 21% | 21% | 19% | 13% | 15% | 11% | 7% | 7% | 4% | 17.0% |
| 1.3-1.5 | 16% | 27% | 30% | 26% | 23% | 22% | 14% | 9% | 15% | 0% | 22.0% |
| 1.1-1.3 | 16% | 30% | 32% | 27% | 25% | 24% | 28% | 21% | 8% | 22% | 23.8% |
| 0.9-1.1 | 16% | 28% | 27% | 29% | 29% | 35% | 19% | 35% | 0% | 0% | 23.2% |
| 0.7-0.9 | 14% | 24% | 22% | 33% | 25% | 39% | 29% | 32% | 0% | 0% | 21.3% |
| 0.5-0.7 | 14% | 29% | 19% | 34% | 44% | 29% | 6% | 0% | 0% | 0% | 21.2% |
| <0.5 | 9% | 18% | 18% | 23% | 27% | 25% | 25% | 18% | 0% | 0% | 14.0% |
| Grand Total | 13.4% | 19.8% | 18.2% | 16.4% | 14.1% | 11.0% | 7.9% | 5.0% | 3.0% | 1.1% | 13.2% |

Curveball RHP vs LHH

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total |
| >3.9 | | 0% | 0% | 0% | 0% | 0% | 2% | 2% | 0% | 0% | 0.3% |
| 3.7-3.9 | | 0% | 0% | 0% | 5% | 5% | 0% | 0% | 0% | 0% | 0.6% |
| 3.5-3.7 | | 0% | 0% | 10% | 25% | 4% | 7% | 2% | 0% | 1% | 2.2% |
| 3.3-3.5 | | 0% | 0% | 0% | 13% | 5% | 4% | 5% | 4% | 1% | 2.7% |
| 3.1-3.3 | | 0% | 0% | 11% | 0% | 9% | 8% | 3% | 2% | 2% | 2.8% |
| 2.9-3.1 | | 0% | 0% | 3% | 2% | 5% | 2% | 6% | 7% | 3% | 3.4% |
| 2.7-2.9 | | 3% | 0% | 7% | 5% | 8% | 4% | 5% | 5% | 2% | 3.7% |
| 2.5-2.7 | | 11% | 10% | 6% | 4% | 5% | 6% | 5% | 4% | 3% | 4.4% |
| 2.3-2.5 | | 10% | 8% | 10% | 2% | 8% | 4% | 6% | 4% | 3% | 4.9% |
| 2.1-2.3 | | 4% | 17% | 9% | 9% | 8% | 6% | 5% | 5% | 6% | 6.6% |
| 1.9-2.1 | | 21% | 13% | 14% | 14% | 7% | 8% | 8% | 6% | 7% | 9.5% |
| 1.7-1.9 | | 12% | 19% | 23% | 19% | 16% | 14% | 10% | 6% | 11% | 6% |
| 1.5-1.7 | | 26% | 29% | 26% | 27% | 24% | 14% | 11% | 10% | 5% | 19.4% |
| 1.3-1.5 | | 17% | 35% | 31% | 27% | 27% | 24% | 19% | 13% | 15% | 4% |
| 1.1-1.3 | | 18% | 25% | 33% | 31% | 23% | 25% | 17% | 14% | 10% | 11% |
| 0.9-1.1 | | 17% | 23% | 32% | 33% | 31% | 30% | 15% | 20% | 21% | 13% |
| 0.7-0.9 | | 15% | 29% | 25% | 30% | 29% | 24% | 20% | 9% | 11% | 0% |
| 0.5-0.7 | | 10% | 28% | 26% | 18% | 31% | 23% | 18% | 18% | 13% | 0% |
| <0.5 | | 8% | 16% | 19% | 19% | 18% | 12% | 7% | 12% | 13% | 0% |
| Grand Total | | 13.0% | 20.9% | 21.1% | 19.3% | 16.4% | 12.4% | 8.8% | 6.4% | 5.3% | 1.8% |
| | | | | | | | | | | | 12.3% |

Slider RHP vs RHH

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total |
| >3.9 | | 0% | 0% | 4% | 2% | 6% | 4% | 6% | 3% | 4% | 1% 3.1% |
| 3.7-3.9 | | 0% | 4% | 0% | 4% | 9% | 13% | 8% | 6% | 4% | 2% 5.8% |
| 3.5-3.7 | | 4% | 12% | 9% | 8% | 11% | 8% | 10% | 9% | 4% | 3% 8.1% |
| 3.3-3.5 | | 8% | 0% | 13% | 19% | 16% | 12% | 18% | 16% | 5% | 0% 12.4% |
| 3.1-3.3 | | 2% | 8% | 11% | 16% | 16% | 15% | 14% | 7% | 3% | 3% 11.1% |
| 2.9-3.1 | | 9% | 15% | 17% | 12% | 12% | 14% | 10% | 7% | 7% | 4% 11.4% |
| 2.7-2.9 | | 9% | 13% | 14% | 10% | 11% | 7% | 6% | 6% | 1% | 2% 9.0% |
| 2.5-2.7 | | 13% | 15% | 13% | 13% | 10% | 7% | 6% | 7% | 3% | 1% 10.4% |
| 2.3-2.5 | | 18% | 19% | 14% | 14% | 10% | 7% | 7% | 3% | 3% | 2% 12.2% |
| 2.1-2.3 | | 20% | 20% | 18% | 14% | 10% | 9% | 4% | 2% | 1% | 1% 14.0% |
| 1.9-2.1 | | 24% | 23% | 20% | 16% | 13% | 12% | 10% | 6% | 4% | 2% 17.8% |
| 1.7-1.9 | | 24% | 27% | 25% | 20% | 18% | 15% | 13% | 6% | 2% | 3% 21.1% |
| 1.5-1.7 | | 24% | 30% | 28% | 26% | 23% | 19% | 17% | 8% | 11% | 7% 24.3% |
| 1.3-1.5 | | 23% | 34% | 35% | 32% | 27% | 25% | 17% | 14% | 6% | 0% 27.5% |
| 1.1-1.3 | | 22% | 34% | 35% | 32% | 30% | 28% | 16% | 6% | 6% | 6% 27.2% |
| 0.9-1.1 | | 20% | 35% | 37% | 36% | 29% | 20% | 25% | 18% | 31% | 0% 27.0% |
| 0.7-0.9 | | 18% | 31% | 35% | 31% | 31% | 24% | 11% | 20% | 0% | 0% 23.8% |
| 0.5-0.7 | | 14% | 24% | 28% | 35% | 37% | 32% | 13% | 19% | 0% | 0% 19.9% |
| <0.5 | | 7% | 18% | 19% | 17% | 21% | 12% | 9% | 0% | 0% | 0% 10.4% |
| Grand Total | | 18.2% | 25.3% | 23.4% | 20.0% | 16.7% | 13.4% | 10.1% | 6.7% | 3.9% | 2.1% 18.0% |

Slider RHP vs LHH

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total |
| >3.9 | 8% | 0% | 0% | 6% | 5% | 12% | 0% | 0% | 2% | 0% | 2.2% |
| 3.7-3.9 | 11% | 0% | 20% | 13% | 10% | 25% | 10% | 6% | 4% | 1% | 7.6% |
| 3.5-3.7 | 0% | 5% | 0% | 16% | 17% | 15% | 13% | 16% | 7% | 4% | 10.0% |
| 3.3-3.5 | 0% | 0% | 11% | 13% | 17% | 18% | 20% | 13% | 9% | 1% | 10.2% |
| 3.1-3.3 | 0% | 0% | 8% | 10% | 18% | 27% | 18% | 12% | 6% | 2% | 10.9% |
| 2.9-3.1 | 1% | 9% | 8% | 12% | 9% | 23% | 15% | 19% | 9% | 1% | 10.7% |
| 2.7-2.9 | 4% | 3% | 4% | 11% | 8% | 9% | 13% | 11% | 10% | 4% | 8.1% |
| 2.5-2.7 | 9% | 3% | 11% | 9% | 11% | 11% | 12% | 9% | 8% | 1% | 8.4% |
| 2.3-2.5 | 11% | 9% | 10% | 6% | 9% | 10% | 5% | 12% | 5% | 1% | 7.4% |
| 2.1-2.3 | 12% | 18% | 14% | 13% | 7% | 9% | 7% | 6% | 6% | 4% | 9.2% |
| 1.9-2.1 | 19% | 20% | 18% | 14% | 12% | 13% | 9% | 4% | 5% | 2% | 12.0% |
| 1.7-1.9 | 26% | 26% | 26% | 21% | 16% | 11% | 10% | 5% | 9% | 5% | 16.8% |
| 1.5-1.7 | 22% | 28% | 26% | 23% | 20% | 14% | 12% | 9% | 5% | 5% | 18.6% |
| 1.3-1.5 | 29% | 47% | 34% | 31% | 23% | 18% | 19% | 8% | 8% | 2% | 26.2% |
| 1.1-1.3 | 25% | 44% | 37% | 27% | 33% | 24% | 23% | 11% | 6% | 7% | 27.9% |
| 0.9-1.1 | 24% | 45% | 37% | 38% | 31% | 30% | 18% | 13% | 7% | 0% | 29.6% |
| 0.7-0.9 | 17% | 35% | 31% | 39% | 29% | 33% | 29% | 15% | 9% | 3% | 26.7% |
| 0.5-0.7 | 17% | 36% | 36% | 30% | 23% | 30% | 31% | 20% | 6% | 0% | 25.6% |
| <0.5 | 8% | 14% | 20% | 17% | 17% | 12% | 11% | 17% | 4% | 0% | 12.4% |
| Grand Total | 17.6% | 26.6% | 23.0% | 20.1% | 16.6% | 15.7% | 12.7% | 9.6% | 6.7% | 2.4% | 15.8% |

Change Up RHP vs RHH

| Average of SwngStk | Column Labels | | | | | | | | | | | |
|--------------------|---------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total | |
| >3.9 | | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0.9% | |
| 3.7-3.9 | | 0% | 0% | 0% | 0% | 33% | 0% | 7% | 5% | 17% | 3% | 5.9% |
| 3.5-3.7 | | 0% | 0% | 0% | 8% | 11% | 11% | 7% | 7% | 13% | 3% | 6.5% |
| 3.3-3.5 | | 0% | 0% | 0% | 0% | 0% | 6% | 8% | 7% | 4% | 4% | 4.0% |
| 3.1-3.3 | | 0% | 20% | 19% | 10% | 18% | 21% | 15% | 10% | 8% | 3% | 10.4% |
| 2.9-3.1 | | 15% | 0% | 10% | 5% | 9% | 10% | 8% | 3% | 9% | 5% | 6.9% |
| 2.7-2.9 | | 8% | 6% | 14% | 13% | 14% | 7% | 13% | 9% | 5% | 5% | 9.1% |
| 2.5-2.7 | | 0% | 6% | 7% | 13% | 9% | 12% | 14% | 13% | 12% | 7% | 10.2% |
| 2.3-2.5 | | 7% | 26% | 12% | 15% | 13% | 11% | 15% | 16% | 14% | 13% | 13.9% |
| 2.1-2.3 | | 6% | 23% | 19% | 14% | 16% | 20% | 14% | 12% | 17% | 15% | 15.8% |
| 1.9-2.1 | | 12% | 12% | 19% | 19% | 12% | 20% | 25% | 20% | 20% | 15% | 18.0% |
| 1.7-1.9 | | 13% | 23% | 24% | 19% | 23% | 33% | 24% | 24% | 16% | 17% | 22.4% |
| 1.5-1.7 | | 10% | 25% | 29% | 24% | 33% | 24% | 35% | 32% | 32% | 23% | 27.3% |
| 1.3-1.5 | | 10% | 18% | 28% | 24% | 28% | 33% | 35% | 28% | 32% | 18% | 26.1% |
| 1.1-1.3 | | 7% | 15% | 25% | 31% | 27% | 34% | 30% | 27% | 28% | 21% | 24.6% |
| 0.9-1.1 | | 8% | 19% | 17% | 30% | 34% | 33% | 44% | 36% | 28% | 17% | 26.2% |
| 0.7-0.9 | | 6% | 16% | 14% | 22% | 27% | 31% | 22% | 31% | 20% | 19% | 20.1% |
| 0.5-0.7 | | 1% | 10% | 5% | 15% | 17% | 22% | 25% | 19% | 0% | 7% | 12.2% |
| <0.5 | | 1% | 3% | 3% | 6% | 10% | 11% | 11% | 12% | 3% | 4% | 5.4% |
| Grand Total | | 5.9% | 15.1% | 17.1% | 18.6% | 20.7% | 22.1% | 22.1% | 18.8% | 17.4% | 11.3% | 17.3% |

Change Up RHP vs LHH

Average of SwngStk Column Labels ▾

| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total | |
|--------------------|-----|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| >3.9 | | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0.2% | |
| 3.7-3.9 | | | 0% | 0% | 0% | 6% | 0% | 3% | 0% | 0% | 0.7% | |
| 3.5-3.7 | | 0% | 0% | 0% | 6% | 4% | 10% | 2% | 3% | 2% | 2.9% | |
| 3.3-3.5 | | 0% | 0% | 12% | 0% | 5% | 6% | 11% | 11% | 2% | 5.1% | |
| 3.1-3.3 | | 0% | 0% | 27% | 4% | 2% | 8% | 16% | 8% | 11% | 3% | |
| 2.9-3.1 | | 0% | 0% | 0% | 8% | 7% | 8% | 13% | 12% | 4% | 7.0% | |
| 2.7-2.9 | | 0% | 9% | 0% | 7% | 4% | 9% | 9% | 10% | 13% | 6% | |
| 2.5-2.7 | | 0% | 0% | 0% | 2% | 8% | 17% | 15% | 13% | 11% | 8% | |
| 2.3-2.5 | | 0% | 7% | 7% | 8% | 9% | 19% | 15% | 14% | 12% | 8% | |
| 2.1-2.3 | | 0% | 5% | 4% | 12% | 17% | 15% | 17% | 13% | 11% | 10% | |
| 1.9-2.1 | | 0% | 8% | 6% | 14% | 21% | 20% | 19% | 17% | 19% | 12% | |
| 1.7-1.9 | 3% | 3% | 4% | 17% | 21% | 26% | 24% | 22% | 17% | 11% | 18.4% | |
| 1.5-1.7 | 1% | 12% | 17% | 17% | 24% | 26% | 24% | 23% | 24% | 15% | 20.9% | |
| 1.3-1.5 | 2% | 14% | 17% | 23% | 29% | 29% | 31% | 30% | 23% | 16% | 24.5% | |
| 1.1-1.3 | 1% | 10% | 17% | 20% | 23% | 25% | 28% | 30% | 19% | 16% | 21.8% | |
| 0.9-1.1 | 4% | 5% | 16% | 15% | 28% | 30% | 25% | 22% | 20% | 16% | 21.0% | |
| 0.7-0.9 | 4% | 5% | 13% | 12% | 21% | 25% | 28% | 18% | 18% | 15% | 17.9% | |
| 0.5-0.7 | 3% | 2% | 6% | 8% | 17% | 17% | 16% | 21% | 20% | 8% | 13.1% | |
| <0.5 | | 0% | 1% | 2% | 3% | 9% | 8% | 5% | 10% | 7% | 5.1% | |
| Grand Total | | 1.6% | 6.1% | 9.8% | 12.9% | 18.8% | 20.8% | 19.8% | 18.2% | 15.5% | 8.8% | 14.9% |

Splitter RHP vs RHH

| Average of SwngStk | Column Labels | | | | | | | | | |
|--------------------|---------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------------------|-----------------------|-----------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 >1 | Grand Total |
| >3.9 | | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0.0% |
| 3.7-3.9 | | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0% 0% | 0.0% |
| 3.5-3.7 | | | 50% 33% | 0% 20% | 0% 0% | 0% 33% | 0% 0% | 0% 7% | | 14.3% |
| 3.3-3.5 | | 0% 100% | 0% 0% | 0% 0% | 0% 0% | 0% 10% | 10% 18% | 0% 0% | | 7.8% |
| 3.1-3.3 | | 0% 0% | 0% 50% | 20% 14% | 14% 13% | 13% 0% | 0% 33% | 0% 0% | | 13.5% |
| 2.9-3.1 | | 0% 0% | 0% 14% | 18% 10% | 10% 29% | 29% 7% | 7% 18% | 6% 6% | | 12.1% |
| 2.7-2.9 | | 0% 0% | 0% 10% | 0% 0% | 6% 8% | 8% 0% | 0% 0% | 0% 0% | | 2.2% |
| 2.5-2.7 | | 0% 0% | 40% 14% | 18% 14% | 7% 7% | 7% 11% | 11% 0% | 3% 3% | | 9.7% |
| 2.3-2.5 | | 0% 20% | 18% 29% | 11% 31% | 6% 6% | 3% 3% | 3% 3% | 12% 5% | | 9.4% |
| 2.1-2.3 | | 25% 25% | 19% 21% | 12% 27% | 27% 18% | 18% 26% | 26% 13% | 12% 12% | | 19.6% |
| 1.9-2.1 | | 24% 17% | 7% 9% | 31% 21% | 12% 27% | 23% 18% | 11% 18% | 12% 12% | | 16.2% |
| 1.7-1.9 | | 21% 38% | 30% 24% | 15% 38% | 38% 27% | 27% 30% | 30% 10% | 15% 15% | | 24.6% |
| 1.5-1.7 | | 32% 25% | 27% 22% | 18% 18% | 32% 32% | 45% 45% | 31% 27% | 28% 28% | | 28.3% |
| 1.3-1.5 | | 12% 29% | 31% 24% | 34% 34% | 37% 37% | 36% 31% | 31% 35% | 15% 15% | | 29.3% |
| 1.1-1.3 | | 0% 18% | 14% 28% | 42% 45% | 45% 45% | 45% 34% | 34% 33% | 21% 21% | | 30.0% |
| 0.9-1.1 | | 6% 18% | 20% 40% | 27% 27% | 40% 40% | 47% 47% | 38% 38% | 7% 27% | | 29.3% |
| 0.7-0.9 | | 11% 20% | 38% 35% | 37% 37% | 39% 39% | 41% 41% | 35% 35% | 13% 13% | | 31.1% |
| 0.5-0.7 | | 3% 11% | 23% 25% | 19% 41% | 41% 41% | 24% 25% | 25% 14% | 25% 25% | | 21.0% |
| <0.5 | | 2% 3% | 5% 13% | 7% 17% | 17% 27% | 27% 14% | 14% 10% | 7% 7% | | 8.7% |
| Grand Total | | 8.2% 16.3% | 19.8% 23.5% | 21.7% 26.7% | 26.4% 20.7% | 20.7% 17.2% | 9.6% 17.2% | 7% 9.6% | | 19.7% |

Splitter RHP vs LHH

| Average of SwngStk | Column Labels | | | | | | | | | | |
|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| Row Labels | <-1 | -1--0.75 | -0.75--0.5 | -0.5--0.25 | -0.25-0 | 0-0.25 | 0.25-0.5 | 0.5-0.75 | 0.75-1 | >1 | Grand Total |
| >3.9 | 0% | | 0% | | 0% | 0% | 0% | 0% | 0% | 0% | 0.0% |
| 3.7-3.9 | | 0% | 0% | 0% | 25% | 0% | 0% | 0% | 0% | 0% | 1.9% |
| 3.5-3.7 | | 0% | 0% | 0% | 20% | 0% | 13% | 11% | 0% | 5% | 6.5% |
| 3.3-3.5 | | 100% | 0% | 0% | 8% | 7% | 9% | 33% | 0% | 12% | 11.9% |
| 3.1-3.3 | | 0% | 0% | 0% | 0% | 0% | 0% | 7% | 6% | 4% | 3.6% |
| 2.9-3.1 | 0% | 0% | 0% | 0% | 0% | 3% | 13% | 6% | 2% | 4.5% | |
| 2.7-2.9 | | 0% | 0% | 0% | 0% | 16% | 10% | 10% | 3% | 3% | 6.2% |
| 2.5-2.7 | 0% | 0% | 11% | 12% | 6% | 0% | 10% | 12% | 3% | 4% | 6.7% |
| 2.3-2.5 | | 0% | 13% | 17% | 24% | 16% | 19% | 10% | 2% | 6% | 11.7% |
| 2.1-2.3 | 0% | 0% | 17% | 21% | 17% | 22% | 15% | 21% | 10% | 4% | 14.4% |
| 1.9-2.1 | 0% | 36% | 30% | 20% | 12% | 23% | 12% | 15% | 12% | 6% | 14.5% |
| 1.7-1.9 | 0% | 18% | 14% | 24% | 32% | 25% | 27% | 15% | 20% | 9% | 20.1% |
| 1.5-1.7 | 13% | 20% | 26% | 15% | 36% | 25% | 33% | 21% | 18% | 9% | 23.8% |
| 1.3-1.5 | 5% | 17% | 17% | 37% | 28% | 26% | 29% | 33% | 24% | 25% | 26.5% |
| 1.1-1.3 | 18% | 20% | 24% | 21% | 45% | 24% | 26% | 31% | 22% | 22% | 26.6% |
| 0.9-1.1 | 0% | 25% | 36% | 33% | 35% | 36% | 22% | 34% | 31% | 8% | 28.7% |
| 0.7-0.9 | 10% | 0% | 18% | 30% | 39% | 35% | 31% | 35% | 15% | 17% | 27.7% |
| 0.5-0.7 | 0% | 19% | 10% | 23% | 24% | 25% | 25% | 33% | 7% | 6% | 20.3% |
| <0.5 | 5% | 0% | 8% | 9% | 21% | 13% | 11% | 9% | 4% | 6% | 9.4% |
| Grand Total | 6.1% | 13.1% | 16.9% | 20.2% | 25.4% | 22.3% | 20.2% | 19.9% | 11.8% | 7.6% | 17.2% |