Statistical Analysis of Two Top American Weightlifting Teams During the Years of 2016 - 2018

⬥Introduction⬥

As Weightlifting in North America continues to rise in popularity, several independent teams have risen to prominence in concert. Although the sport has a governing body, it lacks a centralized systematic approach to athlete development. As such, there are many successful organizations across the country dedicated to producing medalists in the sport both domestically and abroad. These teams are managed by coaches with different backgrounds, interests, and training styles. This report intends to examine the performances of two of the most dominant teams in the current landscape of USA Weightlifting.

⬥FAQ⬥

- *What is this report?*

  - This is a compilation and statistical analysis of performance in national and international weightlifting competitions during the years of 2016, 2017, and 2018. The two teams selected for analysis were *Mash Elite Performance* (**ME**) and *California Strength* (**CS**).

- *Who are the creators of this report?*

  - This project was a joint effort between three /r/weightlifting members, who do not wish to be named.

- *Why was this report created?*

  - This was an unpaid, informal passion project from the authors, created in free time and for no other purpose than to benefit the community. Data and information are interesting, and can be a catalyst for educational discourse.

- *Why were these two teams chosen specifically?*

  - **ME** & **CS** were chosen because they represent two dominant, popular teams in the field of USA Weightlifting. We believe they are also the most comparable in terms of overall data relevance. Other teams - namely *Juggernaut Training Systems* (**JTS**), *East Coast Gold* (**ECG**), and *Garage Strength* (**GSR**) - were considered, but did not possess enough athletes or competition presence for a meaningful comparison to be drawn. **ME** & **CS** both have enough data across all weight categories, age divisions, etc., to be considered semi-comparable.

- *What conclusions will be drawn from this report?*

  - Only those that are supported by the data directly or those that could be considered reasonably speculative. We encourage further conclusions to be made by the community.

- *How long did this take to create, and how was the data gathered?*

  - This project has taken roughly seven weeks. Data was collected via the official result book PDF files available on the websites of the IWF and USAW. Athlete affiliation for international competitions, not presented in the respective result books, was sourced from external articles and/or cross-referenced with social media posts at the approximate date of the competition in question.

- *What was the basis for the chosen parameters?*

  - The parameters were chosen to limit the scope of data such that it is contemporary enough to be relevant as well as small enough to be done within a reasonable timeframe given the manpower and resources available.

⬦<u>About Interpreting Statistics</u>⬦

Statistics are not infallible and do not represent objective truth. Collection of data and subsequent calculations are prone to human error; such errors are likely to exist in this report. All math was double-checked for accuracy, but we recognize that there may be values that are slightly inaccurate, and invite the community to scrutinize anything they find out of place. We welcome any valid corrections.

With respect to the merits of statistics as a whole, it is imperative to understand that the data presented does not strictly qualify the teams in question. Data, while valuable, is contextual, and when stretched far beyond its intended context can be twisted to represent something it does not. These numbers represent collective, factual information about aggregate competition performance; anything beyond that amounts to conjecture and nothing more.

⬦<u>Analysis of Mash Elite Performance (ME)</u>⬦

- **ME** athletes totaled <u>674</u> competitive attempts between the years of 2016 and 2018. <u>350</u> attempts were successful, for a cumulative successful rate of <u>52%</u>. <u>51%</u> of Snatch attempts were successful, and <u>53%</u> of Clean & Jerk attempts were successful.
- In 2016, **ME** athletes had a <u>46%</u> successful competition attempt rate (<u>126</u> out of <u>271</u>). In 2017, that number rose to <u>53%</u> (<u>128</u> out of <u>241</u>), and in 2018 it rose again to <u>59%</u> (<u>96</u> out of <u>162</u>).
- **ME** youth athletes have a successful attempt record of <u>71%</u> across all years. ME junior athletes have a successful attempt record of <u>51%</u>, and ME senior athletes have a successful attempt record of <u>46%</u>.
- **ME** athletes make their first competition attempts <u>69%</u> of the time across all years. They are successful in their second competition attempts <u>55%</u> of the time. Their third competition attempts are successful <u>35%</u> of the time.
- **ME** athletes have higher rates of success in the Clean & Jerk (<u>53%</u>) than the Snatch (<u>51%</u>), across all years.

- **ME** athletes have their highest number of competition makes at the Pan American Championships, across all years. 67% of attempted lifts were successful at the 2018 Pan American Championships, the highest of any competition category.
- **ME** athletes have their lowest number of competition makes in the 2016 Worlds category. Their successful attempt rate in this category was 38%. The **ME** athletes that competed were Mason Groehler, Nathan Damron, Dylan Cooper, and Tom Summa.
- **ME** performances result, on average, in a 9th place finish in the total. **ME** has 31 performances resulting in a top 3 finish in the total. **ME** has 24 performances resulting in a 20th place finish, or an incomplete finish (failure to total). **ME** has had 116 competition performances in total across all years. **ME** performances result in podium placement 26% of the time.
- The **ME** competitor (2+ meets) with the best competition performance is Morgan McCullough. McCullough has made 75% of his Snatch attempts in competition, and 92% of his Clean & Jerk attempts. He has made 83% of all competition attempts.
- The **ME** competitor with the worst competition performance is tied between Tri Phu and Cole Fandale, each with 33% successful competition attempts.
- The **ME** competitor with the highest number of performances is Nathan Damron. Damron has 11 performances with **ME**. His successful attempt rate in the Snatch is 55%. His successful attempt rate in the Clean & Jerk is 39%. In the total, his successful competition attempt rate is 47%. Damron's average competition placement is 10th overall, 5th at National meets and 9th at International meets. Damron has failed to total at 4 out of 11 performances.

◊Analysis of California Strength (CS)◊

- **CS** athletes totaled 558 competitive attempts between the years of 2016 and 2018. 346 attempts were successful, for a cumulative successful rate of 62%. 61% of Snatch attempts were successful, and 63% of Clean & Jerk attempts were successful.
- In 2016, **CS** athletes had a 63% successful competition attempt rate (159 out of 252). In 2017, that number fell to 61% (121 out of 198), and in 2018 it maintained at 61% (66 out of 108).

- **CS** Youth athletes have a successful attempt record of 69% across all years. **CS** Junior athletes have a successful attempt record of 69%, and **CS** Senior athletes have a successful attempt record of 62%.

- **CS** athletes make their first competition attempts 76% of the time across all years. They are successful in their second competition attempts 50% of the time. Their third competition attempts are successful 48% of the time.

- **CS** athletes have a higher rate of success in the Clean & Jerk (63%) than the Snatch (61%), across all years.

- **CS** athletes have their highest number of competition makes at the National Championships (2016 Olympic Trials included as substitute), across all years, at 63%. However, 83% of attempted lifts were successful at the 2017 World Championships, the highest of any competition category.

- **CS** athletes have their lowest number of competition makes at the American Open, across all years, at 59%. Further, only 54% of competition attempts were successful at the 2017 American Open, the lowest of any competition category across all years. The **CS** athletes that competed at this meet were Jordan Weichers, Brittany Davis, Paige Vanlint, Dominic Stolle, Stephen Ngo, Chadwick Horsager, Marshall Flagg, Robert Blackwell, Jaden Washington, Dylan Cooper, David McKellar, Jacob Pudenz, and Jason Starks.

- **CS** performances result, on average, in a 9th place finish in the total. **CS** has 23 performances resulting in a top 3 finish in the total. **CS** has 15 performances resulting in a 20th place finish, or an incomplete finish (failure to total). **CS** has had 92 competition performances in total across all years. **CS** performances result in podium placement 25% of the time.

- The **CS** competitor (2+ meets) with the best competition performance is Jaden Washington. Washington has made 92% of his Snatch attempts in competition, and 75% of his Clean & Jerk attempts. He has made 83% of all competition attempts.

- The **CS** competitor with with the worst competition performance is David McKellar, with 50% successful competition attempts.

- The **CS** competitor with the highest number of performances is a four-way tie between Wesley Kitts, Jacob Pudenz, Jason Starks, and Robert Blackwell, all having 6 performances with **CS**. Their mean successful attempt rate in the Snatch is 54%. Their mean successful attempt rate in the Clean & Jerk is 63%. In the total, their mean

successful competition attempt rate is <u>58%</u>. Out of these four athletes, only Robert Blackwell has failed to total. Blackwell failed to total in <u>2</u> performances.

⬦**Comparison of Mash Elite Performance (ME) to California Strength (CS)**⬦

- **CS** has a better overall performance, with <u>62%</u> of competition attempts being successful, compared to **ME** <u>52%</u>.
- **CS** has a better overall performance in the Snatch, with <u>61%</u> of competition Snatch attempts being successful, compared to **ME** <u>51%</u>.
- **CS** has a better overall performance in the Clean & Jerk, with <u>63%</u> of competition Clean & Jerk attempts being successful, compared to **ME** <u>53%</u>.
- **CS** has a more consistent overall performance, with successful competition performances falling slightly from <u>63%</u> in 2016 to <u>61%</u> in 2018. However, **ME** has a less consistent but significantly improving rate of performance in competition, increasing from <u>46%</u> in 2016 to <u>59%</u> in 2018.
- **ME** athletes achieve podium position more often than **CS** athletes, by a margin of <u>1%</u> (<u>26%</u> to <u>25%</u>, respectively).
- Out of <u>41</u> competitors (2+ meets) across both teams, the bottom <u>10</u> athletes all belong to **ME** when ranked by successful competition attempt rate. Out of the top <u>10</u> athletes, <u>70%</u> belong to **CS**.
- The top performing athletes for **ME** (Morgan McCullough) and **CS** (Jaden Washington) both share a successful competition attempt rate of <u>83%</u>, and the same number of total competition makes (<u>20</u> out of <u>24</u> attempts). Washington makes significantly more Snatch attempts (<u>92%</u>) vs. McCullough (<u>75%</u>), while the inverse is true in the Clean & Jerk (McCullough <u>92%</u>, Washington <u>75%</u>).
- One athlete, Dylan Cooper, has competed for both **ME** and **CS** within the years of 2016 and 2018. While lifting for **ME**, Cooper had a <u>42%</u> successful attempt rate in the Snatch, a <u>50%</u> successful attempt rate in the Clean & Jerk, and a <u>45%</u> successful attempt rate in total. While lifting for **CS**, Cooper had a <u>67%</u> successful attempt rate in the Snatch, a <u>67%</u> successful attempt rate in the Clean & Jerk, and a <u>67%</u> successful attempt rate in total. Cooper's successful attempt rate increased by <u>22%</u> after switching from **ME** to **CS**.

⋄<u>**Broader Context**</u>⋄

In order to provide the most valid contextual reference for this data, the **ME** & **CS** results would have to be compared against an average result across all weight categories in a competition year where both teams provided the most robust competition rosters. This year was 2016, wherein **ME** athletes took <u>271</u> attempts and **CS** athletes took <u>252</u> attempts.

However, gathering data for all **non-ME**, **non-CS** athletes competing at 2016 events would be a time investment beyond the scope of the people involved in this project. As such, we will use results from the 2016 *Senior National Championships* (**SN**) as a reference point. This competition had the highest overall attendance for **CS** athletes, and the second highest overall attendance for **ME** athletes within the years of 2016-2018. **SN** athlete data does not contain athlete data from either **ME** or **CS**.

- **SN** athletes made <u>1784</u> competition attempts. <u>823</u> were successful, and <u>967</u> were unsuccessful.
- **SN** athletes made <u>47%</u> of all competition attempts.
- **SN** male athletes made <u>44%</u> of their competition attempts, and **SN** female athletes made <u>51%</u> of their competition attempts.
- Both **ME** and **CS** athletes have higher rates of success than **SN** athletes (<u>52%</u>**ME** to <u>47%</u>**SN**, and <u>62%</u>**CS** to <u>47%</u>**SN**) overall.
- **SN** athletes performed slightly (<u>47%</u>) better than **ME** athletes (<u>46%</u>) in 2016 specifically.
- **CS** athletes performed significantly (<u>63%</u>) better than **SN** athletes (<u>47%</u>) in 2016 specifically.

⬥Conclusion⬥

Based solely on this data, we feel it is fair to claim that both *Mash Elite Performance* and *California Strength* perform better than the national average. While *California Strength* consistently presents better results than the national average across the board, *Mash Elite Performance* has struggled to produce athletes who can consistently make lifts in competition. However, the data suggests an obvious improvement in *Mash Elite Performance* athletes between 2016 and 2018, which can possibly be correlated to a notable decrease in roster size (271 attempts in 2016 to 162 attempts in 2018), while *California Strength* has experienced a small but statistically insignificant decline.

Both *Mash Elite Performance* and *California Strength* present decreases in competition performance between their Youth, Junior, and Senior divisions. However, *Mash Elite Performance* specifically displays a significant decline, with a 71% success rate for Youth athletes, a 51% success rate for Junior athletes, and a 46% success rate for Senior athletes.

Mash Elite Performance has a notably higher overall competition presence than *California Strength*, with its athletes taking nearly seven hundred competition attempts, compared to *California Strength's* roughly five hundred. It is possible that a larger roster is partly responsible for the disparity in performance between the two teams, suggesting a higher burden on the coaches/staff members.

Despite a lower rate of successful attempts in competition, *Mash Elite Performance* athletes attain podium position slightly more often than *California Strength* athletes. This may partly be due to the team having a wider breadth of talent on a larger roster, but it does suggest something about the merits of their competition approach regarding the goal of medal acquisition itself.

While a majority of this report is dedicated to examining the performances of each team and drawing comparisons between them, it must be stated that both *Mash Elite Performance* and *California Strength* are responsible for a significant amount of international successes for Team USA. Both teams are fielding athletes that produce medals outside of the US, and no individual athlete is a statistical outlier to the point of discrediting the achievements of either *Mash Elite Performance* or *California Strength* as a whole. If not for their athletes and coaches, it is likely that USA Weightlifting would not be improving and performing at the rate it currently is.

♦Diagrams♦

Successful Attempt Rate by Competition & Year

Club	Year	Meet	Made	Attempt	Sn %	Made	Attempt	C&J %	Made	Attempt	Total %
	Competition			*Snatch*			*Clean & Jerk*			*Total*	
CALST	2016.0	American Open	31	54	57%	35	54	65%	66	108	61%
CALST	2016.0	Nationals	44	63	70%	38	63	60%	82	126	65%
CALST	2016.0	Pan-Ams	2	3	67%	1	3	33%	3	6	50%
CALST	2016.0	Trials	3	6	50%	5	6	83%	8	12	67%
CALST	**2016 Total**		**80**	**126**	**63%**	**79**	**126**	**63%**	**159**	**252**	**63%**
CALST	2017.0	American Open	24	48	50%	28	48	58%	52	96	54%
CALST	2017.0	Nationals	28	42	67%	27	42	64%	55	84	65%
CALST	2017.0	Pan-Ams	3	3	100%	1	3	33%	4	6	67%
CALST	2017.0	Worlds	5	6	83%	5	6	83%	10	12	83%
CALST	**2017 Total**		**60**	**99**	**61%**	**61**	**99**	**62%**	**121**	**198**	**61%**
CALST	2018.0	American Open	16	27	59%	18	27	67%	34	54	63%
CALST	2018.0	Nationals	10	18	56%	10	18	56%	20	36	56%
CALST	2018.0	Pan-Ams	4	6	67%	4	6	67%	8	12	67%
CALST	2018.0	Worlds	1	3	33%	3	3	100%	4	6	67%
CALST	**2018 Total**		**31**	**54**	**57%**	**35**	**54**	**65%**	**66**	**108**	**61%**
CALST Total			**171**	**279**	**61%**	**175**	**279**	**63%**	**346**	**558**	**62%**
MASH	2016.0	American Open	21	45	47%	22	45	49%	43	90	48%
MASH	2016.0	Nationals	34	74	46%	31	68	46%	65	142	46%
MASH	2016.0	Pan-Ams	6	9	67%	4	9	44%	10	18	56%
MASH	2016.0	Worlds	4	12	33%	4	9	44%	8	21	38%
MASH	**2016 Total**		**65**	**140**	**46%**	**61**	**131**	**47%**	**126**	**271**	**46%**
MASH	2017	American Open	9	18	50%	9	18	50%	18	36	50%
MASH	2017	Nationals	45	87	52%	44	82	54%	89	169	53%
MASH	2017	Pan-Ams	5	9	56%	5	9	56%	10	18	56%
MASH	2017	Worlds	5	9	56%	6	9	67%	11	18	61%
MASH	**2017 Total**		**64**	**123**	**52%**	**64**	**118**	**54%**	**128**	**241**	**53%**
MASH	2018	American Open	5	12	42%	7	12	58%	12	24	50%
MASH	2018	Nationals	28	46	61%	28	44	64%	56	90	62%
MASH	2018	Pan-Ams	8	12	67%	8	12	67%	16	24	67%
MASH	2018	Worlds	5	12	42%	7	12	58%	12	24	50%
MASH	**2018 Total**		**46**	**82**	**56%**	**50**	**80**	**63%**	**96**	**162**	**59%**
MASH Total			**175**	**345**	**51%**	**175**	**329**	**53%**	**350**	**674**	**52%**

Successful Attempt Rate by Competitor

Competitor (2+ meets)		Snatch			Clean & Jerk			Total		
Name	Club	Made	Attempt	Sn %	Made	Attempt	C&J %	Made	Attempt	Total %
Jaden Washington	CALST	11	12	92%	9	12	75%	20	24	83%
Morgan McCullough	MASH	9	12	75%	11	12	92%	20	24	83%
Julius Weisberg	CALST	6	9	67%	8	9	89%	14	18	78%
Ryan Grimsland	MASH	9	12	75%	9	12	75%	18	24	75%
Meredith Alwine	MASH	4	6	67%	5	6	83%	9	12	75%
Rachael Bommicino	CALST	6	6	100%	3	6	50%	9	12	75%
Ajay Goel	CALST	7	9	78%	6	9	67%	13	18	72%
Jared Pagila	CALST	6	9	67%	7	9	78%	13	18	72%
Rachael Stull	CALST	7	9	78%	6	9	67%	13	18	72%
Dominic Stolle	CALST	8	12	67%	9	12	75%	17	24	71%
Dylan Cooper	CALST	6	9	67%	6	9	67%	12	18	67%
Britney Davis	CALST	4	6	67%	4	6	67%	8	12	67%
Stephen Ngo	CALST	7	12	58%	8	12	67%	15	24	63%
Wesley Kitts	CALST	12	18	67%	10	18	56%	22	36	61%
Jordan Cantrell	MASH	4	9	44%	7	9	78%	11	18	61%
Jacob Wyatt	MASH	5	9	56%	5	8	63%	10	17	59%
Tom Summa	MASH	13	24	54%	15	24	63%	28	48	58%
Jacob Pudenz	CALST	12	18	67%	9	18	50%	21	36	58%
Jason Starks	CALST	7	18	39%	14	18	78%	21	36	58%
Jordan Weichers	CALST	7	12	58%	7	12	58%	14	24	58%
Nadeen Pierre	MASH	7	12	58%	7	12	58%	14	24	58%
Danielle Bloomquist	MASH	4	6	67%	3	6	50%	7	12	58%
Kristen Bondoc	CALST	4	6	67%	3	6	50%	7	12	58%
Paige Vanlint	CALST	3	6	50%	4	6	67%	7	12	58%
Matthew Winniger	MASH	5	12	42%	7	9	78%	12	21	57%
Robert Blackwell	CALST	8	18	44%	12	18	67%	20	36	56%
Michelle Giannino	CALST	5	9	56%	5	9	56%	10	18	56%
Rebecca Gerdon	MASH	5	9	56%	5	9	56%	10	18	56%
Nicole Lim	CALST	9	15	60%	7	15	47%	16	30	53%
David McKellar	CALST	3	9	33%	6	9	67%	9	18	50%
Daniel Koppenhaver	MASH	3	6	50%	3	6	50%	6	12	50%
Victoria Brady	MASH	3	6	50%	3	6	50%	6	12	50%
Zach Meyers	MASH	3	6	50%	3	6	50%	6	12	50%
Nathan Damron	MASH	18	33	55%	13	33	39%	31	66	47%
Mason Groehler	MASH	8	15	53%	6	15	40%	14	30	47%
Brian Reisenauer	MASH	4	12	33%	7	12	58%	11	24	46%
Dylan Cooper	MASH	5	12	42%	4	8	50%	9	20	45%
Hunter Elam	MASH	5	12	42%	5	12	42%	10	24	42%
Anthony Sannella	MASH	2	6	33%	3	6	50%	5	12	42%
Cole Fandale	MASH	2	6	33%	2	6	33%	4	12	33%
Tri Phu	MASH	3	6	50%	1	6	17%	4	12	33%