

HOCKEY ANALYTICS:

A CLOSE LOOK AT POWERPLAY PERFORMANCE

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HISTORY OF BYU HOCKEY

- PROVO ICECATS (1996)
 - JOINS THE AMERICAN COLLEGIATE HOCKEY ASSOCIATION (ACHA)
- BYU COUGARS (2007)
 - OFFICIALLY RECOGNIZED BY BRIGHAM YOUNG UNIVERSITY AS AN EXTRAMURAL SPORT
- RECENT COACHES
 - 2014-2018: COACH ED GANTT
 - 2018-PRESENT: COACH DAVE PITCHER

TEAM PROGRESS OVER 5 YEARS

- 2014/2015: 3-22-1 (NOT RANKED IN TOP 20)
- 2015/2016: 7-21-1 (16TH IN WESTERN REGION)
- 2016/2017: 12-13-2 (12TH IN WESTERN REGION)
- 2017-2018: 12-13-3 (13TH IN WESTERN REGION, MADE IT TO REGIONAL TOURNAMENT FOR FIRST TIME IN 11 YEARS)
- 2018-2019: 15-9-1-2 (11TH IN WESTERN REGION)
 - 2019 WASATCH CUP AND MOUNTAIN WESTERN TOURNAMENT CHAMPIONS



PLAYER BOX SCORE STATISTICS

Number	Name	Pos	GP	SOG	Hits	Goals	Assists	Points	+	-	+/-	PIM	FOT	FOW	FO%	PPG	SHG
3	Sam Rutter	D	29	12	31	1	5	6	32	26	6	4	0	0		0	0
4	Teagan Pitcher	D	30	106	71	7	10	17	65	43	22	32	0	0		3	2
5	Jacob Eisenstat	D	20	99	25	10	17	27	52	28	24	14	1	0		7	1
6	Hunter Blum	D	28	18	20	1	2	3	16	18	-2	20	1	0	0.00%	0	0
7	Alex Barrus	F	30	112	54	14	26	40	68	31	37	2	607	381	62.77%	4	2
8	Chris Udall	F	22	23	22	0	4	4	8	10	-2	14	65	32	49.23%	0	0
9	Aleks Stroud	F	30	125	33	18	21	39	66	26	40	8	82	38	46.34%	6	5
10	Cody Barrus	D	19	47	25	5	7	12	44	26	18	16	3	3	100.0%	2	0
12	Chandler Cattelain	F	22	37	56	3	5	8	19	21	-2	43	209	91	43.54%	0	0
14	Kayden Nielsen	F	20	31	8	3	1	4	7	10	-3	8	15	6	40.00%	1	0
15	Logan Porter	D	29	73	76	8	7	15	45	28	17	50	11	7	63.64%	4	1
16	CJ Coslett	F	21	67	14	11	9	20	30	14	16	20	113	73	64.60%	3	0
17	Noah Frost	F	4	14	1	0	1	1	3	1	2	0	3	2	66.67%	0	0
18	Shad Karlson	F	30	55	52	5	3	8	15	19	-4	24	29	15	51.72%	1	0
19	Hugh Blum	F	29	21	33	3	1	4	12	13	-1	14	231	117	50.65%	0	0
20	Dimitri Wheeler	F	25	28	29	2	3	5	13	13	0	26	2	0	0.00%	0	0
21	Ashton Shimbashi	F	30	117	58	20	29	49	65	28	37	16	57	34	59.65%	8	1
22	Axel Boyer	F	13	81	13	9	8	17	28	8	20	20	109	68	62.39%	2	0
23	Nixon Barber	F	25	37	29	3	3	6	14	13	1	17	41	18	43.90%	0	0
24	Chase Christensen	F	11	45	23	6	5	11	19	5	14	10	46	26	56.52%	2	0
25	Ian Thurnhorst	F	29	72	46	6	10	16	34	22	12	48	27	15	55.56%	1	0

Key

Pos = Position
 GP = Games Played
 SOG = Shots On Goal
 +/- = On-Ice Plus/Minus
 PIM = Penalties In Minutes
 FOT = Face-Off Total
 FOW = Face-Off Wins
 FO% = Face-Off Percentage
 PPG = Powerplay Goals
 SHG = Shorthanded Goals

PLAYER AVERAGES PER GAME

Number	Player	Shots/G	Hits/G	Goals/G	Assists/G	Points/G	PIM/G	Season FO%	Season PPG	Season SHG
3	Sam Rutter	0.414	1.069	0.034	0.172	0.207	0.138		0	0
4	Teagan Pitcher	3.533	2.367	0.233	0.333	0.567	1.067		3	2
5	Jacob Eisenstat	4.95	1.25	0.5	0.85	1.35	0.7		7	1
6	Hunter Blum	0.643	0.714	0.036	0.071	0.107	0.714	0.00%	0	0
7	Alex Barrus	3.733	1.8	0.467	0.867	1.333	0.067	62.77%	4	2
8	Chris Udall	1.045	1	0	0.182	0.182	0.636	49.23%	0	0
9	Aleks Stroud	4.167	1.1	0.6	0.7	1.3	0.267	46.34%	6	5
10	Cody Barrus	2.474	1.316	0.263	0.368	0.632	0.842	100.00%	2	0
12	Chandler Cattelain	1.682	2.545	0.136	0.227	0.364	1.955	43.54%	0	0
14	Kayden Nielsen	1.55	0.4	0.15	0.05	0.2	0.4	40.00%	1	0
15	Logan Porter	2.517	2.621	0.276	0.241	0.517	1.724	63.64%	4	1
16	CJ Coslett	3.19	0.667	0.524	0.429	0.952	0.952	64.60%	3	0
17	Noah Frost	3.5	0.25	0	0.25	0.25	0	66.67%	0	0
18	Shad Karlson	1.833	1.733	0.167	0.1	0.267	0.8	51.72%	1	0
19	Hugh Blum	0.724	1.138	0.103	0.034	0.138	0.483	50.65%	0	0
20	Dimitri Wheeler	1.12	1.16	0.08	0.12	0.2	1.04	0.00%	0	0
21	Ashton Shimbashi	3.9	1.933	0.667	0.967	1.633	0.533	59.65%	8	1
22	Axel Boyer	6.231	1	0.692	0.615	1.308	1.538	62.39%	2	0
23	Nixon Barber	1.48	1.16	0.12	0.12	0.24	0.68	43.90%	0	0
24	Chase Christensen	4.091	2.091	0.545	0.455	1	0.909	56.52%	2	0
25	Ian Thurnhorst	2.483	1.586	0.207	0.345	0.552	1.655	55.56%	1	0

RESEARCH FOCUS: POWERPLAY PERFORMANCE

- BYU'S OVERALL EFFICIENCY ON POWERPLAYS
- HOW DOES THIS SEASON'S PERFORMANCE COMPARE TO LAST SEASON'S?
- WHICH PLAYERS ARE MOST EFFECTIVE IN DIFFERENT ODD-MAN SITUATIONS?

WHAT IS A POWERPLAY?

- OCCURS WHEN THE OPPOSING TEAM INCURS A PENALTY AND PLAYER(S) ARE RETAINED OFF THE ICE, GIVING THE OTHER TEAM AN ODD MAN ADVANTAGE
 - 2-MINUTE MINOR PENALTY
 - PLAYER STAYS IN PENALTY BOX FOR 2 MINUTES OR UNTIL OPPOSING TEAM SCORES
 - Ex: SLASHING, HOOKING, HOLDING, TOO MANY MEN, DELAY OF GAME, ETC.
 - 5-MINUTE MAJOR PENALTY
 - PLAYER STAYS IN PENALTY BOX FOR 5 MINUTES, REGARDLESS OF GOALS SCORED BY OPPOSING TEAM
 - ILLEGAL CHECK TO THE HEAD, HEAD-BUTTING, FIGHTING, CROSS-CHECKING, ETC.



ICE TIME BREAKDOWN – 2018/2019 SEASON

TOTAL TIME OF ON-ICE PLAY = 1871
MINUTES OVER 31 GAMES

- EVEN STRENGTH = 1344 MINUTES (71.8%)
- POWERPLAY = 269 MINUTES (14.4%)
- PENALTY KILL = 258 MINUTES (13.8%)

Total Goals on season = 135 Goals

- Even Strength = 74 Goals (54.8%)
- Powerplay = 49 Goals (36.3%)
- Penalty Kill = 12 Goals (8.9%)

ICE TIME BREAKDOWN – 2017/2018 SEASON

TOTAL TIME OF ON-ICE PLAY = 1699
MINUTES OVER 28 GAMES

- EVEN STRENGTH = 1269 MINUTES (74.8%)
- POWERPLAY = 231 MINUTES (13.6%)
- PENALTY KILL = 197 MINUTES (11.6%)

Total Goals on season = 128 Goals

- Even Strength = 86 Goals (67.2%)
- Powerplay = 32 Goals (25%)
- Penalty Kill = 10 Goals (7.8%)

MEASURING ODD-MAN EFFICIENCY

PowerPlay Efficiency Rate (PPER)

- Measure of offensive performance in odd-man matchups
- Goals Scored per Minute (the higher, the better)

Penalty Kill Efficiency Rate (PKER)

- Measure of defensive performance in odd-man matchups
- Goals Against Scored per Minute (the lower, the better)

2017-2018 SEASON

On Ice	Frequency	Total Time	PPER	PKER
5v4 Major	5	20.367	0.196	0
4v5 Major	8	13.683	0.073	0.073
5v4 Minor	131	195.15	0.103	0.036
4v5 Minor	116	157.617	0.051	0.108
4v4 Minor	57	75.367	0.133	0.027
5v3 Minor	17	9.617	0.728	0.104
3v5 Minor	18	14.15	0	0.141
4v3 Minor	8	6.65	0.150	0
3v4 Minor	12	12.167	0.082	0.082

2018-2019 SEASON

On Ice	Frequency	Total Time	PPER	PKER
5v4 Major	4	19.233	0.364	0
4v5 Major	3	15	0	0.267
5v4 Minor	161	235.683	0.157	0.004
4v5 Minor	157	226.717	0.053	0.088
4v4 Minor	59	66.067	0.182	0.015
5v3 Minor	9	7.2	0.417	0
3v5 Minor	14	9.317	0	0.322
4v3 Minor	8	7.2	0.278	0.139
3v4 Minor	8	6.65	0	0

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5v3 Minor	17	9.617	0.728	0.104
3v5 Minor	18	14.15	0	0.141
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3v5 Minor	14	9.317	0	0.322
4v3 Minor	8	7.2	0.278	0.139
3v4 Minor	8	6.65	0	0

INDIVIDUAL PLAYER IMPACT IN ODD-MAN OFFENSE

Good PPER, High Usage

- JACOB EISENSTAT – 0.244 5v4 PPER
- ALEX BARRUS – 0.151 5v4 PPER
- SAM RUTTER – 0.079 4v5 PPER
- ALEKS STROUD – 0.071 4v5 PPER

Good PPER, Low Usage

- CHASE CHRISTENSEN – 0.373 5v4 PPER
- CJ COSLETT – 0.354 5v4 PPER
- ALEX BOYER – 0.213 5v4 PPER
- CHRIS UDALL – 0.265 4v5 PPER

INDIVIDUAL PLAYER IMPACT IN ODD-MAN DEFENSE

Good PKER, HIGH USAGE

- TEAGAN PITCHER – 0.051 4v5 PKER
- SAM RUTTER – 0.053 4v5 PKER
- ALEX BARRUS – 0.060 4v5 PKER
- ALEKS STROUD – 0.063 4v5 PKER

Good PKER, Low Usage

- ALEX BOYER – 0.021 4v5 PKER
- CJ COSLETT – ALLOWED 0 GOALS ON 7 MATCHUPS

SUGGESTED LINEUPS

5v4 MINOR

- DEFENSEMEN
 - J. EISENSTAT & C. BARRUS (0.218 PPER)
- FORWARDS
 - A. BARRUS & A. STROUD (0.07 PPER)
 - BETTER TO PLAY BARRUS AND STROUD ON SEPARATE POWERPLAY LINES
 - FORWARDS OF NOTE: ASHTON SHIMBASHI, ALEX BOYER, CHASE CHRISTENSEN, CJ COSLETT

4v5 MINOR

- DEFENSEMEN
 - S. RUTTER & T. PITCHER (0 GOALS ALLOWED, 17 MATCHUPS)
 - T. PITCHER & J. EISENSTAT (0.039 PKER)
- FORWARDS
 - A. BARRUS & A. STROUD (0.044 PKER)



9 BRIGHAM YOUNG UNIVERSITY MEN'S ICE HOCKEY



THANK YOU!