

Supplemental Documents

State of the Legion August 2022 - Statistical meta-analysis of post battle force Legion

Lucas J. Ustick, Tue G. Brodersen, John R. Bushman

Methods:

Legion Stats data collection

First a reference database with the latest units and upgrades was seeded using endpoints provided by list builder developers (Legion HQ and Tabletop Admiral). The LegionStats database was seeded with the exact same cards as these list builder applications. This makes LegionStats cross-compatible with each of these list building applications.

Once a tournament has concluded, Tournament Organizers (TO) can input a link to the tournament in LegionStats. LegionStats then sends a request to Tabletop.to to download all the relevant information. Matches and rounds are saved in an internal database. All raw data is collected in this manner, which is the basis for calculated win rates and other LegionStats data products.

Lists are parsed in order to connect army and faction data to the win and loss counts. When parsing the lists, LegionStats needs the URL from the list builders (the URL needs to be the very first line of the paragraph, human-readable text can be placed below the link). This makes the curation of lists more efficient and less reliant on external services. If the list can't be parsed for any reason (LegionStats has an outdated parser, database doesn't have the newest cards seeded, the list is a picture or text), the tournament participant will be noted as having a missing list, and the following sub-step is taken. In this case lists are manually curated by hand. This manual curation is labor intensive and is only applied to certain high-profile events with poor data collection.

Legion Stats data processing

All byes are excluded from the analysis. Win and loss data is only counted if the army list is known for the player. In the case only one player in a match has a known list, that player wins, and loss data is recorded while the unknown player is not. All army data is stored in an internal database, so once imported this data can only be modified if the TO or an admin updates or modifies an army list on the LegionStats website.

The purpose of the "Global stats" -> "All units stats" interface is to show each unit and their win/loss count and win rate, compared to other, similar units. This interface can constrain the query on units based on the following: a date range for tournaments included, minimum number of participants in included tournaments, by faction, and rank of the units. Win/loss counts are grouped based on units present in the list. Win/loss counts are associated with a unit if the army has at least one of the unit. If an army has multiple copies of a unit it still only counts as one win or loss per game for that unit. Each unit is iterated over, and each win and loss for the associated list is counted with the name of the unit saved alongside it. Win rates were calculated with the following formula $(\text{wins}/(\text{wins}+\text{losses})) * 100$. Units are then sorted in descending order of win rate.

Win and loss counts on the "Global stats" -> "Factions" page were calculated in the following manner. The query on this page can be constrained by: faction, a date range for

tournaments included, minimum number of participants in included tournaments, and the inclusion or exclusion of battle forces wins/losses. Based on the chosen constraints army lists are then iterated over. Win and loss counts were grouped based on activation number of the associated army. Win rates were calculated in the same manner mentioned previously. The “Factions Combined” page, displays all win/loss data split by activation number, while the “Factions” page groups this data based on the faction played. Mirror matches between factions were included in the win loss data.

Data selection

All data was collected through publicly accessible LegionStats data products (<https://legionstats.thefifthtrooper.com/>). Events that took place in 2022 between July 1st and August 21th on Legion Stats were used in this analysis. We did not include a minimum number of participants. This was done to include finals and top 8 results in this analysis. The above timeframe captures all events that have taken place since the release of Battle Forces and Shadow Collective. The following tournaments were included in the analysis.

1. Wolffe's Strike One	20-Aug-2022
2. GenCon WQ - FINALS:	07-Aug-2022
3. Danish Open Qualifier - TRoA / Spilforsyningen:	06-Aug-2022
4. GenCon WQ - Heat 2:	05-Aug-2022
5. GenCon WQ - Heat 1:	04-Aug-2022
6. Hannover WQ - Top 8:	31-Jul-2022
7. Hannover WQ - Heat 2:	30-Jul-2022
8. July Star Wars: Legion at Gamers Guild:	30-Jul-2022
9. Hannover WQ - Heat 1:	29-Jul-2022
10. SW Legion Swoopies Tournament:	23-Jul-2022
11. Luminous Gaming Open: Star Wars Legion:	23-Jul-2022
12. LoneStar Open - Day 1:	23-Jul-2022
13. Lonestar Open - Champion Bracket:	23-Jul-2022
14. Summer Smackdown:	09-Jul-2022

Unit win/loss data was collected from the “Global stats” -> “All units stats” page on Legion Stats. <https://legionstats.thefifthtrooper.com/all-units/stats?from=2022-07-01&to=2022-08-21&minimum-participants=1&rank=all&faction=all>

Faction win/loss data was collected from the “Global stats” -> “Factions” page on Legion Stats.

Empire: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-07-01&to=2022-08-21&faction=empire&minimum-participants=1>

Rebels: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-07-01&to=2022-08-21&faction=rebels&minimum-participants=1>

Republic: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-07-01&to=2022-08-21&faction=republic&minimum-participants=1>

Separatists: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-07-01&to=2022-08-21&faction=separatists&minimum-participants=1>

Mercenary: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-07-01&to=2022-08-21&faction=mercenary&minimum-participants=1>

Activation win/loss data was collected from the “Global stats” -> “Factions” page on Legion Stats. <https://legionstats.thefifthtrooper.com/global-stats/factions?from=2022-07-01&to=2022-08-21&minimum-participants=1>

Pre-Battle force (Kashyyyk wave meta) faction statistic were calculated using data from Jul 1st 2022 - June 30th 2022. We again had no minimum participant number.

Pre-Battle force Faction win/loss data was collected from the “Global stats” -> “Factions” page on Legion Stats.

Empire: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-01-01&to=2022-06-30&faction=empire&minimum-participants=1>

Rebels: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-01-01&to=2022-06-30&faction=rebels&minimum-participants=1>

Republic: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-01-01&to=2022-06-30&faction=republic&minimum-participants=1>

Separatists: <https://legionstats.thefifthtrooper.com/global-stats/faction?from=2022-01-01&to=2022-06-30&faction=separatists&minimum-participants=1>

Unit analysis

Units with a minimum of 20 games recorded were included in this analysis. This is to avoid any random effects due to small sample size. The following units were excluded from the analysis because they did not meet this threshold (STable 5).

Pearson's Chi Square analysis

Pearson's Chi Square analysis was carried out to determine if there was a statistically significant effect of units, faction, or activation on win/loss counts. This statistical analysis was carried out in R (R Core Team. 2022. “R: A Language and Environment for Statistical Computing.”). Pearson's Chi Square was calculated using the `chisq.test` function from the base R stats package. Default arguments were used in all cases beside the analysis of activation counts. Because there were only 3 observations for 13 activations, we used the `simulate.p.value = T` argument to evaluate our P-value.

Invader League data collection

Invader League data was used in lieu of in person events because of pandemic restrictions during this time period. Data was collected for Invader League season 5 and 6. Raw match data was provided by invaderleague.com and faction by faction win and loss counts were extracted. Mirror matches between factions were included in these win and loss counts.

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Supplemental Figures & Tables:

STable 1: Post-Battle Force Faction stats (1/Jul/2022 - 22/Aug/2022)

Faction	Wins	Losses	Win rate	Total games
Empire	150	140	0.51724138	290
Rebels	92	95	0.49197861	187
Republic	75	99	0.43103448	174
Separatists	89	104	0.4611399	193
Mercenary	81	47	0.6328125	128

STable 2: Pre-Battle Force Faction stats (1/Jan/2022 - 30/Jun/2022)

Faction	Wins	Losses	Win rate	Total games
Empire	353	363	0.49301676	716
Rebels	265	264	0.50094518	529
Republic	211	242	0.46578366	453
Separatists	346	297	0.53810264	643
Mercenary	0	0	NA	0

STable 3: Activation stats (1/Jul/2022 - 22/Aug/2022)

Activations	Wins	Losses	Win rate	Total games
7	5	9	0.35714286	14
8	28	37	0.43076923	65
9	106	126	0.45689655	232
10	260	227	0.5338809	487
11	88	78	0.53012048	166
12	18	9	0.66666667	27
13	1	2	0.33333333	3

STable 4: All unit stats (1/Jul/2022 - 22/Aug/2022). Ranked by residual effect on winrate.

Rank	Unit	Wins	Losses	Win rate	Total games	residual
1	Imperial Officer Ruthless Commander	83	45	64.84%	128	2.275
2	Maul A Rival	60	30	66.67%	90	2.151
3	Pyke Syndicate Foot Soldiers	110	71	60.77%	181	1.935
4	A-A5 Speeder Truck	45	23	66.18%	68	1.813
5	Pyke Syndicate Capo	98	64	60.49%	162	1.781
6	Black Sun Enforcers	58	34	63.04%	92	1.686
7	Stormtroopers Heavy Response Unit	23	10	69.70%	33	1.547
8	Snowtroopers	52	33	61.18%	85	1.378
9	Cad Bane Needs No Introduction	63	42	60%	105	1.362
10	Darth Vader The Emperor's Apprentice	48	34	58.54%	82	1.018
11	Bossk Trandoshan Terror	60	46	56.60%	106	0.877
12	T-Series Tactical Droid Programmed For Strategy	32	23	58.18%	55	0.796
13	Boba Fett Infamous Bounty Hunter	39	29	57.35%	68	0.789
14	74-Z Speeder Bikes	42	32	56.76%	74	0.751
15	Darth Vader Dark Lord of the Sith	18	12	60%	30	0.728
16	Scout Troopers Strike Team	82	69	54.30%	151	0.649
17	Black Sun Vigo	12	8	60%	20	0.595
18	K-2SO Sardonic Security Droid	21	16	56.76%	37	0.531
19	DF-90 Mortar Trooper	87	76	53.37%	163	0.508
20	Mark II Medium Blaster Trooper	52	44	54.17%	96	0.499
21	Rebel Veterans	53	46	53.54%	99	0.418
22	AAT Trade Federation Battle Tank	32	27	54.24%	59	0.399
23	Cassian Andor Capable Intelligence Agent	22	18	55%	40	0.396
24	Luke Skywalker Jedi Knight	28	24	53.85%	52	0.335
25	Shoretroopers	90	82	52.33%	172	0.328
26	Mandalorian Super Commandos	22	19	53.66%	41	0.28
27	AT-ST	18	16	52.94%	34	0.196
28	Rebel Pathfinders	12	11	52.17%	23	0.11
29	Dewback Rider	40	38	51.28%	78	0.091
30	Gar Saxon	15	14	51.72%	29	0.089
31	STAP Riders	18	17	51.43%	35	0.073
32	Leia Organa Fearless and Inventive	23	22	51.11%	45	0.053
33	1.4 FD Laser Cannon Team	19	19	50%	38	-0.047
34	Imperial Royal Guards	19	19	50%	38	-0.047
35	Yoda Grand Master of the Jedi Order	28	29	49.12%	57	-0.151
36	R2-D2 Hero of a Thousand Devices	18	19	48.65%	37	-0.162
37	Imperial Special Forces Inferno Squad	32	34	48.48%	66	-0.236
38	Fleet Troopers	21	23	47.73%	44	-0.263
39	Count Dooku Darth Tyranus	19	21	47.50%	40	-0.271
40	R2-D2 Independent Astromech	15	17	46.88%	32	-0.292
41	General Grievous Sinister Cyborg	11	13	45.83%	24	-0.325
42	Wookiee Warriors Kashyyyk Defenders	11	13	45.83%	24	-0.325
43	Chewbacca Hero of Kashyyyk	19	22	46.34%	41	-0.379
44	IG-100 MagnaGuard	64	69	48.12%	133	-0.394
45	Rebel Officer Resolute Commander	32	36	47.06%	68	-0.405
46	Chewbacca Walking Carpet	28	32	46.67%	60	-0.423
47	Rebel Commandos Strike Team	48	53	47.52%	101	-0.427
48	B1 Battle Droids	96	104	48%	200	-0.507
49	Rebel Troopers	60	67	47.24%	127	-0.524
50	BX-Series Droid Commandos Strike Team	15	19	44.12%	34	-0.527
51	Iden Versio Inferno Squad Leader	37	43	46.25%	80	-0.541
52	Clone Captain Rex Honorable Soldier	13	17	43.33%	30	-0.556
53	Anakin Skywalker The Chosen One	21	26	44.68%	47	-0.566
54	Tauntaun Riders	15	20	42.86%	35	-0.64
55	BARC Speeder	32	39	45.07%	71	-0.649
56	Emperor Palpatine Ruler of the Galactic Empire	8	12	40%	20	-0.663

57	Clone Commander Trained For Leadership	38	46	45.24%	84	-0.684
58	Stormtroopers	70	81	46.36%	151	-0.724
59	TX-130 Saber-Class Fighter Tank	8	13	38.10%	21	-0.803
60	LAAT Patrol Transport	12	18	40%	30	-0.813
61	Han Solo Unorthodox General	31	41	43.06%	72	-0.894
62	Director Orson Krennic Architect of Terror	24	33	42.11%	57	-0.896
63	B2 Super Battle Droids	22	31	41.51%	53	-0.925
64	Sabine Wren Explosive Artist	12	19	38.71%	31	-0.927
65	Imperial Death Troopers	27	37	42.19%	64	-0.941
66	ARC Troopers Strike Team	32	43	42.67%	75	-0.96
67	DRK-1 Sith Probe Droids	10	18	35.71%	28	-1.104
68	AT-RT	18	29	38.30%	47	-1.181
69	Wookiee Warriors	37	52	41.57%	89	-1.191
70	Padme Amidala Spirited Senator	41	57	41.84%	98	-1.213
71	Phase II Clone Troopers	29	43	40.28%	72	-1.226
72	T-47 Airspeeder	15	26	36.59%	41	-1.257
73	Phase I Clone Troopers	74	96	43.53%	170	-1.287
74	DSD1 Dwarf Spider Droid	25	39	39.06%	64	-1.292
75	Super Tactical Droid Kalani	29	44	39.73%	73	-1.3
76	Imperial Special Forces	17	30	36.17%	47	-1.386
77	Maul Impatient Apprentice	17	31	35.42%	48	-1.474

STable 5: Units excluded from the analysis (1/Jul/2022 - 22/Aug/2022)

Unit	Wins	Losses	Win rate	Total games
Lando Calrissian Smooth Operator	10	2	83.33%	12
Scout Troopers	13	6	68.42%	19
Wookiee Warriors Kashyyyk Resistance	2	1	66.67%	3
Super Tactical Droid	9	5	64.29%	14
NR-N99 Persuader-class Tank Droid	8	5	61.54%	13
General Veers Master Tactician	11	8	57.89%	19
Rebel Commandos	9	7	56.25%	16
Luke Skywalker Hero of the Rebellion	5	4	55.56%	9
Agent Kallus Hunter of Spectres	7	6	53.85%	13
Obi-Wan Kenobi Civilized Warrior	7	6	53.85%	13
Raddaugh Gnasp Fluttercraft	4	5	44.44%	9
ARC Troopers	4	5	44.44%	9
Jyn Erso Stardust	7	10	41.18%	17
Mandalorian Resistance Clan Wren	7	10	41.18%	17
E-Web Heavy Blaster Team	7	12	36.84%	19
Mandalorian Resistance	4	7	36.36%	11
Occupier Combat Assault Tank	3	7	30%	10
Droidekas	4	10	28.57%	14
Super Tactical Droid Kraken	2	5	28.57%	7
Infantry Support Platform	4	14	22.22%	18
Wookiee Chieftain Clan Leader	2	9	18.18%	11
BX-Series Droid Commandos	1	5	16.67%	6

STable 6: Invader League 5 Stats

Faction	Wins	Losses	Win rate
Rebel	140	146	0.48951049
Imperial	96	115	0.4549763
Republic	180	126	0.58823529
Separatist	103	112	0.47906977

STable 7: Invader League 6 Stats

Faction	Wins	Losses	Win rate
Rebels	155	156	0.49839228
Empire	69	126	0.35384615
Republic	163	124	0.56794425
Separatists	212	193	0.52345679