



Alaska Airlines Bird Strike Notes
An Airline Perspective
Spring 2023

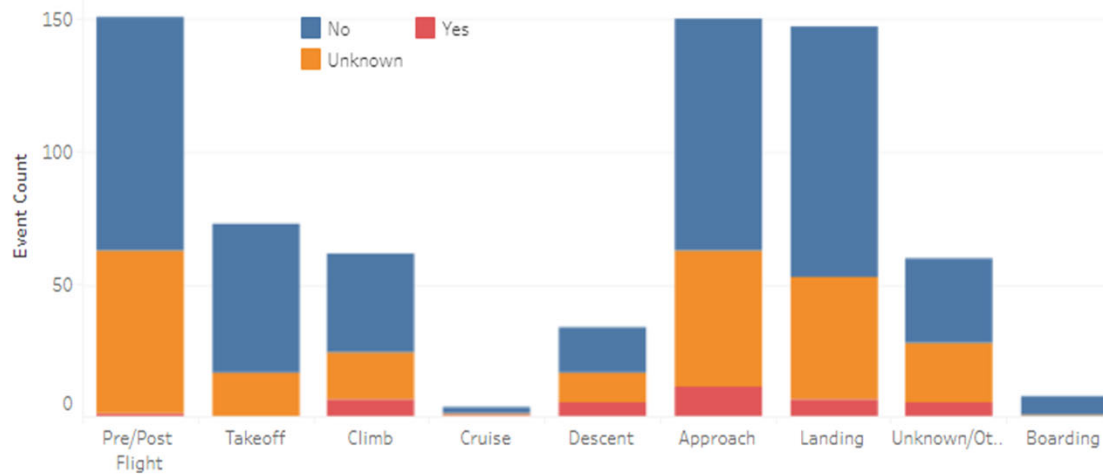
6-Year Look at Alaska Air Group Strike Rates per 10k Departures

Snapshot of our overall AAG Bird Strike Dashboard

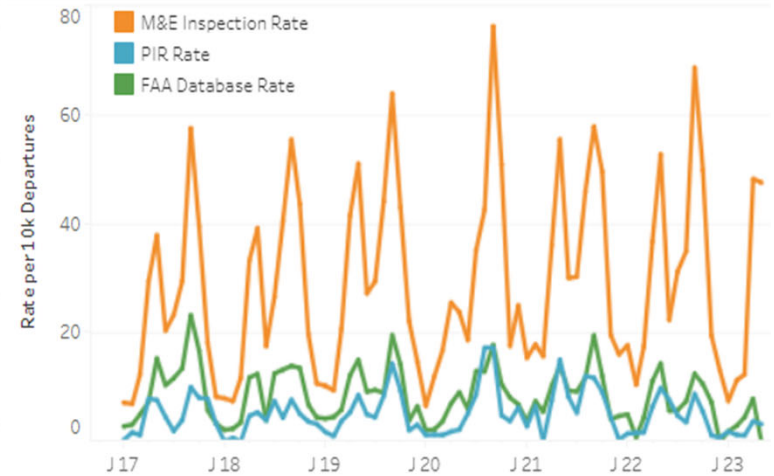
Birdstrike Events

Airline

Damage by Phase of Flight

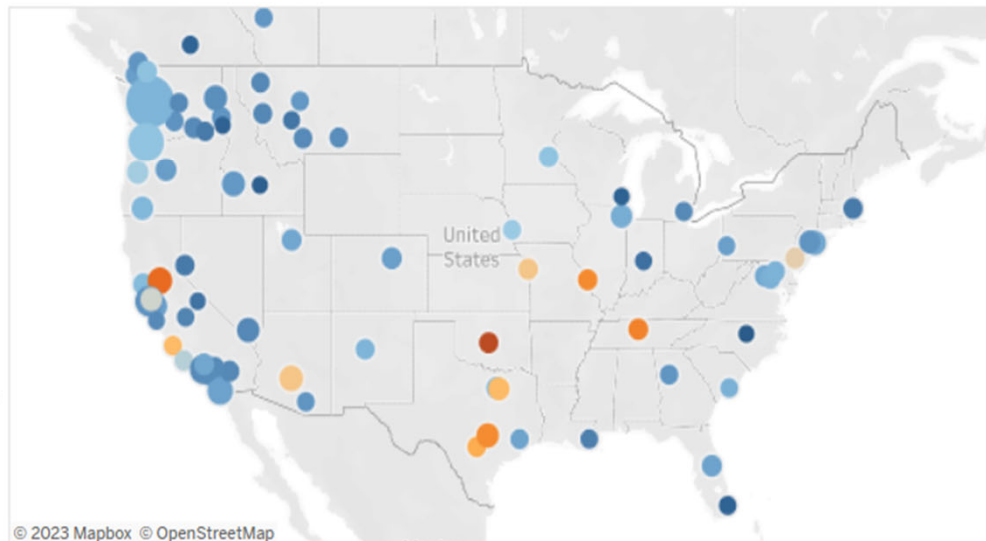


Reporting Rate by Source



Mx Rate
3.04 89.00

Mx Count
1
500
1,000
1,500
2 10R

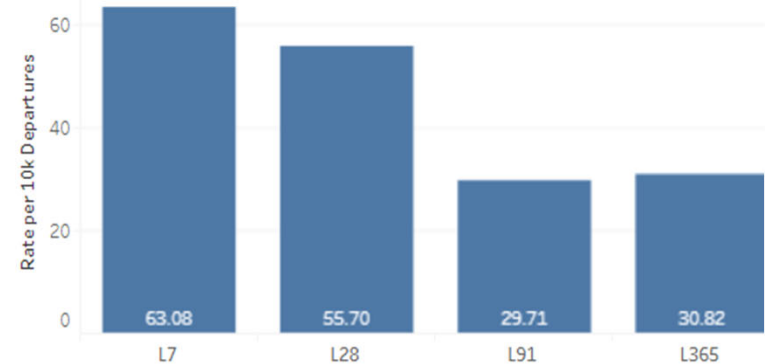


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Rolling YoY % Change

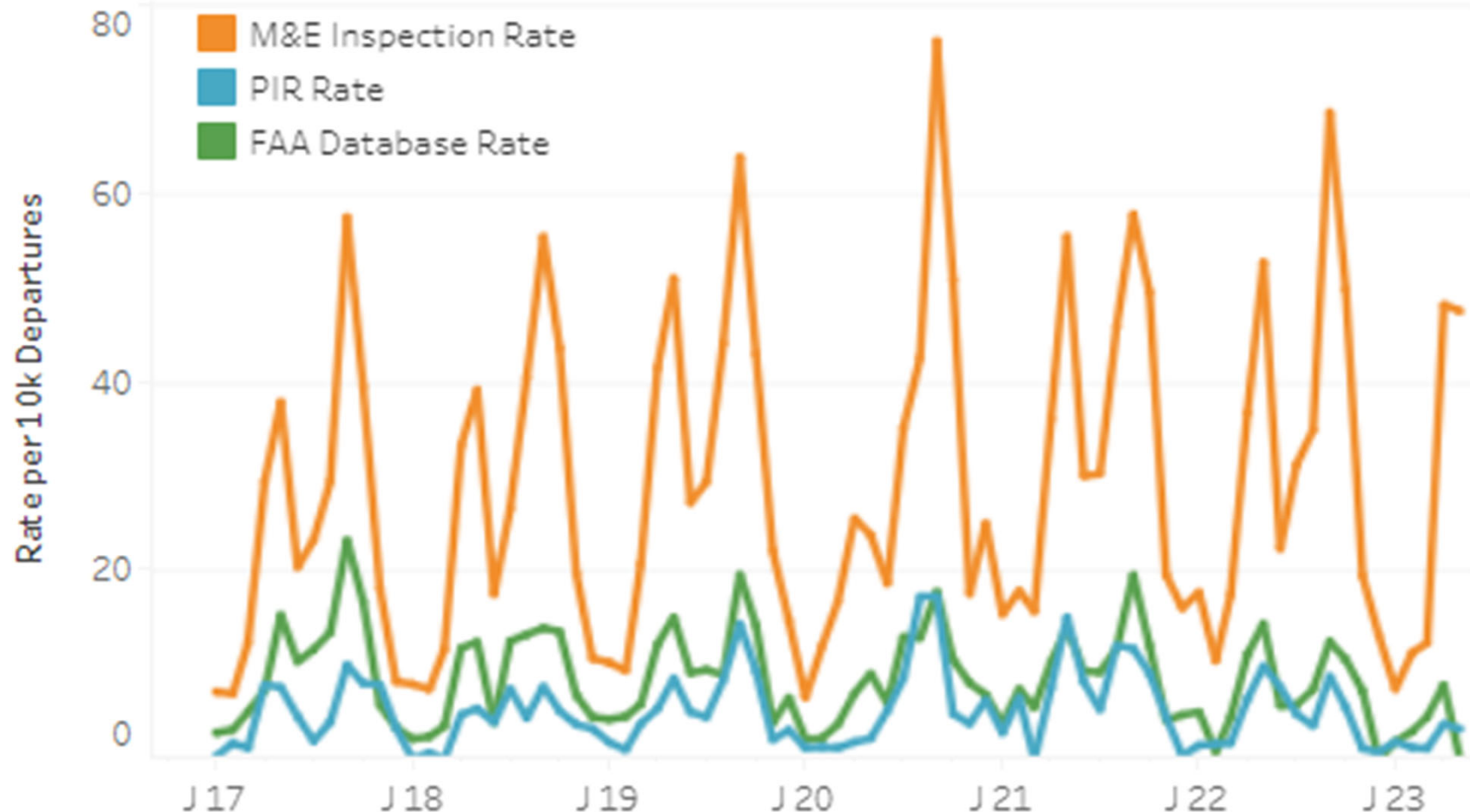
MoM % Change

2019	2020	2021
0.00%	-15.12%	23.83%



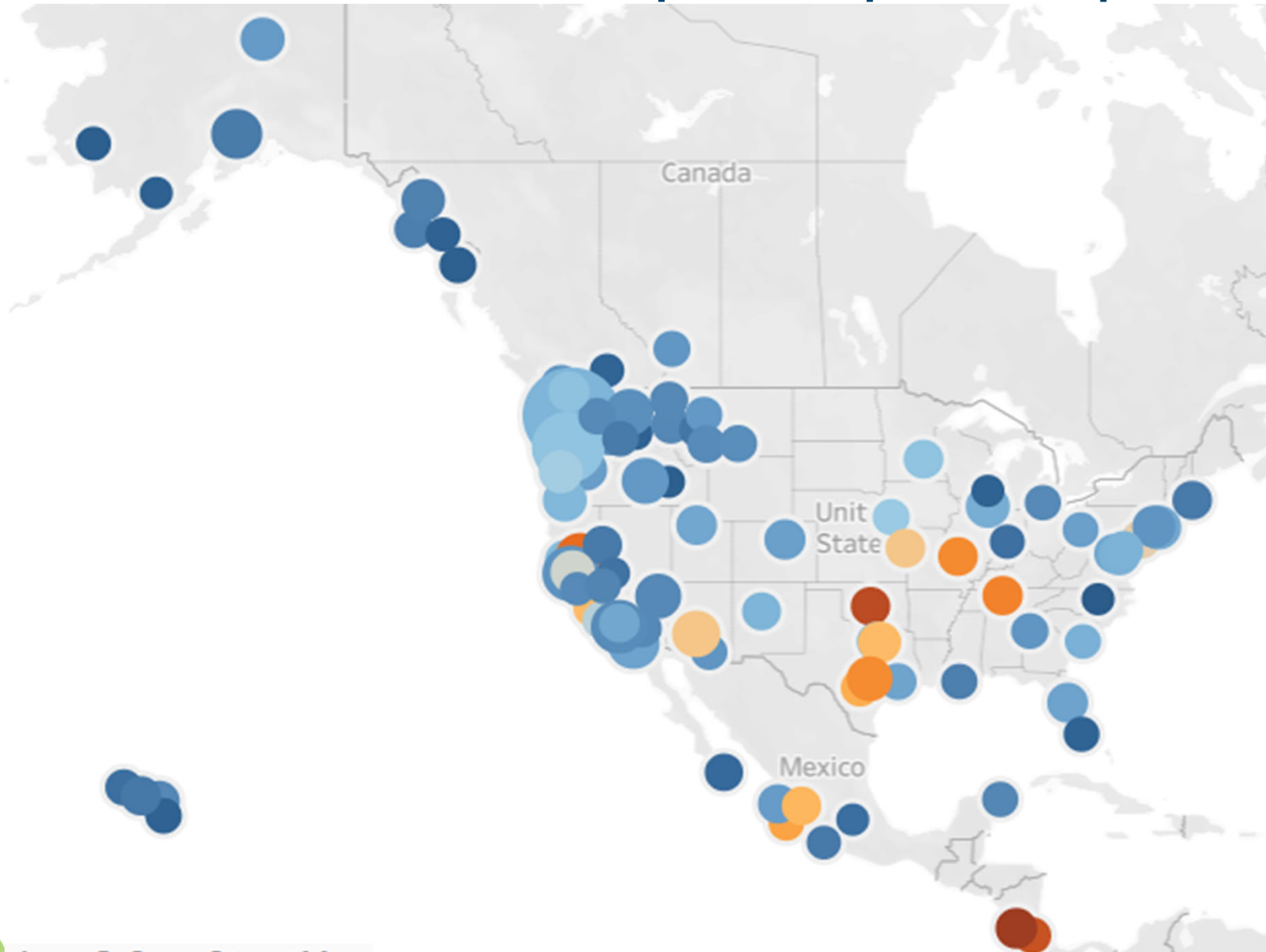
6-Year Look at Alaska Air Group Strike Rates per 10k Departures (Orange line derived by using Maintenance Inspection Records)

Reporting Rate by Source



Notice distinct spring and fall migrations + Covid year outliers. **April 2023 finished at 48** (previous record was 41)

6-Year Look at Alaska Air Group Strikes per 10k Departures



Ball color is strike *rate*; ball size is strike *count*

6-Year Look at Alaska Air Group Strike Rates per 10k Departures (All North American Airports with strike rates above AAG average shown here)

AIRPORT	Flights Operated	M&E Inspection Count	M&E Inspection Rate				Running Annual Rate			
	2022	2022	2019	2020	2021	2022	2019	2020	2021	2022
SMF	2,703	12	65.98	118.52	104.02	44.40	65.98	82.55	90.07	80.26
BNA	684	11	86.02	0.00	46.15	160.82	86.02	55.98	52.91	79.62
PHL	523	2	55.78	128.87	111.86	38.24	55.78	73.04	81.34	72.71
STL	503	6	56.69	0.00	104.60	119.28	56.69	38.79	56.59	70.48
DAL	684	1	53.13	99.26	63.69	14.62	53.13	79.07	74.39	63.56
EUG	1,889	8	81.50	12.19	88.50	42.35	81.50	53.72	66.48	61.03
AUS	2,847	13	82.15	47.03	60.41	45.66	82.15	66.80	64.53	58.49
MCI	646	5	65.27	16.03	58.57	77.40	65.27	43.17	48.24	55.17
RDD	363	2	0.00	0.00	51.55	55.10			51.55	53.86
STS	817	2	57.57	93.35	16.05	24.48	57.57	72.36	51.22	45.94
PAE	3,992	18	54.80	23.18	46.88	45.09	54.80	45.87	46.07	45.78
PDX	25,841	144	39.30	35.46	52.44	55.73	39.30	37.95	42.02	45.12
MFR	2,632	9	37.85	55.08	49.41	34.19	37.85	44.51	46.17	43.14
IAH	686	1	91.46	22.42	36.70	14.58	91.46	63.52	54.64	42.86
OAK	1,638	4	66.39	18.15	23.60	24.42	66.39	53.93	46.97	41.82
DCA	1,780	8	38.53	17.99	55.44	44.94	38.53	30.73	38.88	40.64
SBA	635	4	13.81	25.51	54.57	62.99	13.81	17.92	32.45	40.26
DFW	1,778	6	20.24	71.30	43.53	33.75	20.24	42.24	42.74	40.07
PHX	4,928	19	38.32	45.73	36.51	38.56	38.32	41.95	39.88	39.48
RDM	2,596	13	39.39	22.68	44.90	50.08	39.39	31.96	36.41	39.45
BLI	1,643	9	41.87	26.01	22.62	54.78	41.87	36.87	31.86	38.82
OMA	350		53.76	0.00	81.30	0.00	53.76	34.42	52.63	38.46
SBP	250	1	66.23	138.89	0.00	40.00	66.23	80.21	37.36	37.99
TPA	767	1	81.30	50.51	22.75	13.04	81.30	64.46	45.80	36.60
SEA	103,952	395	35.45	32.85	37.66	38.00	35.45	34.41	35.53	36.19
JFK	4,154	12	53.57	11.68	23.54	28.89	53.57	42.94	39.04	35.70
SLC	1,148	3	53.85	0.00	40.93	26.13	53.85	34.45	37.16	34.44
YYC	608	4	22.15	0.00	0.00	65.79	22.15	18.50	17.61	34.40
YYJ	534		56.32	0.00	0.00	0.00	56.32	46.64	45.78	33.93
BUR	1,591	11	26.91	0.00	14.07	69.14	26.91	20.60	18.19	33.09
IAD	1,181	5	36.98	41.32	0.00	42.34	36.98	38.18	29.67	32.96
MSP	923	4	16.56	26.39	46.78	43.34	16.56	20.35	28.36	32.05
DEN	1,785	6	53.11	22.73	15.97	33.61	53.11	40.59	31.48	32.04
CHS	333	1	0.00	0.00	92.02	30.03			32.54	31.87
Grand Total	341,896	1,095	31.97	27.20	33.65	32.03	31.97	30.20	31.32	31.51



Top 10 AAG Airports by *Strike Count*

AIRPORT	Flights Operated		Inspection Count		Inspection Rate		YOY Change		Running Annual Rate	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
Grand Total	341,896	117,422	1,087	269	31.79	22.91	-4.90%	-27.94%	31.07	30.14
SEA	103,952	33,286	388	82	37.32	24.63	-0.09%	-34.00%	36.01	34.79
PDX	25,841	9,132	144	28	55.73	30.66	7.93%	-44.98%	48.14	46.20
LAX	12,984	5,125	35	7	26.96	13.66	8.59%	-49.33%	22.77	21.76
SFO	15,386	6,151	31	18	20.15	29.26	-35.30%	45.24%	23.67	24.52
ANC	18,422	6,540	30	8	16.28	12.23	3.13%	-24.88%	14.45	14.18
BOI	7,259	1,729	27	3	37.20	17.35	1.33%	-53.35%	33.76	32.35
PHX	4,928	2,083	19	10	38.56	48.01	5.59%	24.52%	39.82	40.96
PAE	3,992	1,463	18	6	45.09	41.01	-3.81%	-9.05%	39.66	39.87
SNA	3,993	1,464	17	1	42.57	6.83	-7.57%	-83.96%	38.25	34.63
GEG	7,728	2,305	16	1	20.70	4.34	-2.77%	-79.05%	27.75	25.46

Notes:

- AAG average rate is 30 strikes per 10k departures
- We have compared with SWA and AA, finding similar rates at common airports.

Top 10 AAG Airports by *Strike Rate Per 10k Departures*

AIRPORT	Flights Operated		Inspection Count		Inspection Rate		YOY change		Running Annual Rate	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
LIR	338	153	9	5	266.27	326.80	4.67%	22.73%	241.21	252.61
SJO	124	134	2		161.29	0.00	64.52%	-100.00%	118.58	93.75
SMF	2,703	947	12	2	44.40	21.12	-57.32%	-52.43%	87.92	81.00
PHL	523	175	2		38.24	0.00	-65.81%	-100.00%	88.37	78.28
BNA	684	249	11	1	160.82	40.16	248.44%	-75.03%	76.38	72.05
STL	503	213	6		119.28	0.00	14.04%	-100.00%	79.25	68.71
GDL	511	265	3		58.71	0.00	-45.11%	-100.00%	75.57	64.76
ZLO	105	38		1	0.00	263.16	-100.00%	0.00%	35.97	63.29
DAL	684	234	1		14.62	0.00	-77.05%	-100.00%	67.02	61.91
MCI	646	237	5	2	77.40	84.39	32.16%	9.03%	51.20	54.79
AUS	2,847	1,191	13	8	45.66	67.17	-24.41%	47.10%	50.75	53.23

Top 2 are both in Costa Rica (963 bird species; Many federal restrictions/protectations) Both airports have asked for more help. We visited both before Covid. Should we visit again? LIR needs significant airport work to mitigate wildlife; SJO hazards are due to low-income areas/slaughterhouses bordering airport.

SMF - Continues to hold the spot as the top US airport by *Strike Rate* (Farms around airport; Exclusive Waterfowl Hunting Clubs in area). Most of the strikes are off-airport. 2 biologists on staff, efforting 1 more. They could use more staff; USGS study is ongoing. Avian Radar was ineffective at SMF. **Note huge improvement in 2022 vs Running Rate!**

Note that NONE of the top 10 airports by *rate* are in the top 10 by *count*. We are more aggressive with our AAG pressure on the airports with the higher counts because that is where our risk is.

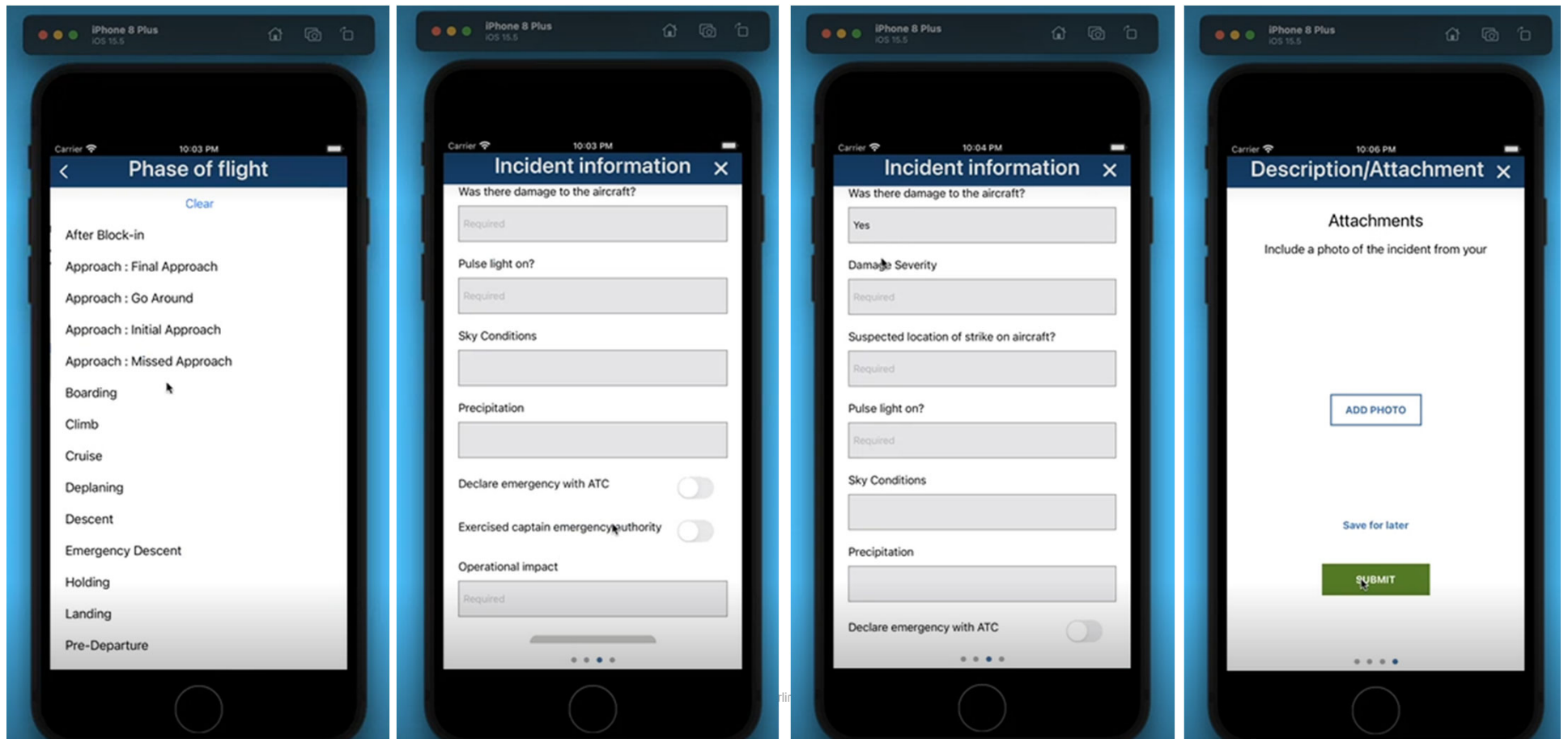
Alaska Airlines Mobile Pilot Strike Reporting App Update

Here are some samples of what the app looks like.

Note that we added the super important “phase of flight” info.

If the pilot selects “damage”, it will bring more drop downs out.

There is even a place for the pilot to add photos!



In summary, our strike levels have stabilized to almost exactly what they were in 2019 (Pre-Covid), despite increased wildlife activity at airport areas.

This shows that the airport teams are back up and running at the levels they were at before Covid.

The next big step for us is getting our automatic reporting system in place. This will get the critical strike information to the FAA Wildlife Strike Database ASAP, and dramatically increase strike reporting.



Questions?

Thanks so much!

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