

Appendix E  
**WIND AND WEATHER ANALYSIS**  
Colorado Springs Airport

Prepared by:

LeighFisher, Inc.

Appendix E  
**WIND AND WEATHER ANALYSIS**  
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This appendix summarizes the wind and weather analysis conducted for the Colorado Springs Airport Master Plan. An analysis of Airways Hourly Surface Observations (TD-3280) data from the National Climatic Data Center (NCDC) was conducted to assess the annual percent occurrence of weather conditions and runway use configurations. Weather conditions – namely cloud ceiling and visibility – determine the air traffic control (ATC) procedures that can be used at an airport, which in turn affect runway capacity and aircraft delay.

### **COLORADO SPRINGS WEATHER CONDITIONS**

For purposes of the wind and weather analysis, visual meteorological conditions (VMC) and instrument meteorological conditions (IMC) are defined in accordance with FAA guidance, as follows:

- VMC weather is defined as cloud ceilings at least 1,000 feet above ground level (AGL) *and* visibility at least 3 miles.
- IMC weather is defined as cloud ceilings below 1,000 feet AGL *or* visibility less than 3 miles.

In VMC weather, aircraft operations operate under Visual Flight Rules (VFR); likewise, in IMC weather, aircraft operations operated under Instrument Flight Rules (IFR). Under IFR, aircraft operations are reliant on instrument landing systems (ILS) which provide varying approach minima. Category I, Category II, and Category III ILS provide for aircraft operations in the following weather conditions:

- Category I ILS provides for operations when cloud ceilings are at least 200 feet but less than 1,000 feet above ground level (AGL) *or* visibility is at least 1/2 mile but less than 3 miles.
- Category II ILS provides for operations when cloud ceilings are at least 100 feet but less than 200 feet above ground level (AGL) *or* visibility is at least 1/4 mile but less than 1/2 mile.
- Category III ILS provides for operations when cloud ceilings are of less than 100 feet above ground level (AGL) *or* visibility is less than 1/4 mile.

The percent occurrence of weather conditions that would require the use of Category I, Category II, and Category III instrument landing systems (ILS) was examined for a 10-year period ended in October 2009, as summarized in Table E-1. As shown, it was determined that the provision of a Category II/III ILS would have enabled the Airport to remain open up to 2.6% more of the year (the equivalent of approximately 9.5 days).

Table E-1  
**WEATHER CONDITIONS**  
 Colorado Springs Airport

Weather condition	Cloud ceiling (ft)	Visibility (mi)	24-hour annual occurrence	Daytime annual occurrence	Nighttime annual occurrence	Annual occurrence between 0500 and 1000 hours	Occurrence in February between 0500 and 1000 hours
VFR	1,000	3	92.6%	93.6%	91.0%	90.1%	87.1%
IFR	<1,000 or	<3	7.4%	6.4%	9.0%	9.9%	12.9%
Category I	200-1,000 or	1/2 to 3	4.7%	4.3%	5.4%	5.8%	5.1%
Category II	100-200 or	1/4 to 1/2	2.0%	1.5%	2.9%	3.1%	5.4%
Category III	<100 or	< 1/4	0.6%	0.6%	0.7%	1.0%	2.4%
Additional coverage with Category II/III ILS			2.6%	2.1%	3.6%	4.1%	7.8%

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Table E-2 summarizes the weather conditions on a monthly basis. As expected, the best weather conditions occur in the summer months (e.g. July), and the most inclement weather condition occur in the winter months (e.g. February). From January through March, IMC occurs over 10 percent of the time. It is during these months, when the airport is most vulnerable to being closed due to Category II or Category III conditions which would require an instrument landing system of greater capability than that currently available. The Airport experiences the greatest share of Category II/III conditions at nearly 6% of the time.

Table E-2  
**MONTHLY SUMMARY OF WEATHER CONDITIONS**  
Colorado Springs Airport

Month	VMC	IMC	Category I	Category II	Category III
Jan	89.97	10.03	6.91	2.11	1.01
Feb	87.84	12.16	6.40	3.86	1.90
Mar	88.18	11.82	7.84	3.49	0.49
Apr	90.54	9.47	6.73	2.45	0.29
May	94.55	5.45	3.37	1.72	0.35
Jun	96.55	3.45	1.71	0.72	1.01
Jul	97.56	2.44	1.58	0.63	0.23
Aug	95.56	4.44	3.21	0.94	0.29
Sep	97.36	2.64	1.64	0.67	0.33
Oct	91.21	8.79	5.64	2.80	0.35
Nov	91.39	8.61	4.69	3.07	0.85
Dec	90.63	9.38	6.50	2.12	0.76

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Tables E-3 through E-8 provide the percent occurrences of various weather conditions by hour of the day and month of the year, as follows:

- Table E-3 – VMC
- Table E-4 – IMC
- Table E-5 – Category I
- Table E-6 – Category II
- Table E-7 – Category III
- Table E-8 – Category II/III

Evaluating the weather on an hourly basis provides insight as to the timing of weather conditions versus the timing of most aircraft operations. For example, the peak hour for airline arrivals is 1 p.m. For the ten-year sample, the 1 p.m. hour experiences IMC about 4.5% of the time and Category II/III conditions about 1.2% of the time. As shown on Table E-8, the most prevalent Category II/III conditions occur between the hours of midnight and 10 a.m.

Table E-3  
**24 HOUR DISTRIBUTION OF VMC**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	89.80	81.38	84.49	91.55	93.49	98.88	97.13	95.41	96.73	90.74	90.13	90.81	91.77
1	89.44	83.71	84.65	89.39	92.71	96.74	95.60	95.47	97.51	89.44	89.76	90.52	91.28
2	90.45	84.64	84.62	88.89	92.77	93.96	95.89	93.45	95.42	89.80	88.01	90.55	90.74
3	87.16	85.00	82.89	90.40	92.02	94.40	95.40	92.08	95.05	88.36	88.75	89.54	90.11
4	87.00	86.22	84.98	87.64	92.38	94.10	95.05	91.82	94.38	88.40	87.94	90.03	90.01
5	89.02	88.51	83.45	86.84	92.15	89.89	94.17	92.08	94.71	88.95	87.98	91.89	89.98
6	86.67	89.19	85.63	84.61	92.48	90.77	94.13	91.10	94.27	89.18	90.06	91.56	89.98
7	86.25	86.11	84.88	84.51	89.99	91.08	95.08	90.55	94.58	88.49	88.99	89.96	89.22
8	84.20	84.82	83.94	88.01	90.09	92.06	98.21	87.78	91.85	88.43	87.77	89.48	88.91
9	86.80	87.18	86.12	86.87	90.52	95.79	98.34	93.06	95.72	91.72	88.72	88.86	90.83
10	87.46	86.79	86.31	89.66	93.20	96.47	98.99	94.79	98.18	90.32	91.58	89.15	91.93
11	90.97	89.58	88.40	91.65	93.85	98.88	99.28	97.23	98.92	90.32	92.62	89.15	93.41
12	90.75	87.04	90.42	92.39	96.60	97.83	99.28	97.59	98.25	92.70	92.25	91.17	93.90
13	94.56	93.20	91.89	91.41	96.89	100.00	99.64	98.21	98.96	95.08	94.34	91.46	95.48
14	94.88	92.16	92.73	93.50	97.91	97.90	98.99	97.91	99.63	95.86	95.55	91.53	95.73
15	93.19	91.44	92.41	93.67	98.27	98.13	99.28	99.28	99.63	94.20	95.62	92.54	95.66
16	93.48	92.19	94.17	94.98	97.94	98.51	99.35	98.57	100.00	93.84	94.95	90.22	95.70
17	93.16	90.73	93.45	94.71	97.61	99.25	97.69	97.91	99.63	94.56	93.53	90.68	95.26
18	90.68	90.80	92.05	94.04	97.91	99.63	98.63	98.27	100.00	92.18	92.56	89.44	94.69
19	90.75	92.30	92.83	91.65	97.25	100.00	99.35	100.00	100.00	91.36	91.92	91.07	94.88
20	93.48	91.12	91.53	93.67	96.17	98.27	97.98	99.28	100.00	93.19	93.10	92.44	95.04
21	90.03	85.82	89.15	91.95	96.57	97.22	98.31	98.27	98.55	90.91	92.72	91.95	93.50
22	89.05	85.11	89.48	90.98	95.16	99.63	97.20	96.84	97.51	89.86	91.21	90.06	92.71
23	89.96	83.21	85.89	89.87	95.23	97.90	98.57	96.48	97.14	91.17	93.36	90.94	92.53
Average	89.97	87.84	88.18	90.54	94.55	96.55	97.56	95.56	97.36	91.21	91.39	90.63	92.64

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Table E-4  
**24 HOUR DISTRIBUTION OF IMC**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	10.20	18.62	15.51	8.45	6.51	1.12	2.87	4.59	3.27	9.26	9.87	9.19	8.23
1	10.56	16.29	15.35	10.61	7.29	3.26	4.40	4.53	2.49	10.56	10.24	9.48	8.72
2	9.55	15.36	15.38	11.11	7.23	6.04	4.11	6.55	4.58	10.20	11.99	9.45	9.26
3	12.84	15.00	17.11	9.60	7.98	5.60	4.60	7.92	4.95	11.64	11.25	10.46	9.89
4	13.00	13.78	15.02	12.36	7.62	5.90	4.95	8.18	5.62	11.60	12.06	9.97	9.99
5	10.98	11.49	16.55	13.16	7.85	10.11	5.83	7.92	5.29	11.05	12.02	8.11	10.02
6	13.33	10.81	14.37	15.39	7.52	9.23	5.87	8.90	5.73	10.82	9.94	8.44	10.02
7	13.75	13.89	15.12	15.49	10.01	8.92	4.92	9.45	5.42	11.51	11.01	10.04	10.78
8	15.80	15.18	16.06	11.99	9.91	7.94	1.79	12.22	8.15	11.57	12.23	10.52	11.09
9	13.20	12.82	13.88	13.13	9.48	4.21	1.66	6.94	4.28	8.28	11.28	11.14	9.17
10	12.54	13.21	13.69	10.34	6.80	3.53	1.01	5.21	1.82	9.68	8.42	10.85	8.07
11	9.03	10.42	11.60	8.35	6.15	1.12	0.72	2.77	1.08	9.68	7.38	10.85	6.59
12	9.25	12.96	9.58	7.61	3.40	2.17	0.72	2.41	1.75	7.30	7.75	8.83	6.10
13	5.44	6.80	8.11	8.59	3.11	-	0.36	1.79	1.04	4.92	5.66	8.54	4.52
14	5.12	7.84	7.27	6.50	2.09	2.10	1.01	2.09	0.37	4.14	4.45	8.47	4.27
15	6.81	8.56	7.59	6.33	1.73	1.87	0.72	0.72	0.37	5.80	4.38	7.46	4.34
16	6.52	7.81	5.83	5.02	2.06	1.49	0.65	1.43	-	6.16	5.05	9.78	4.30
17	6.84	9.27	6.55	5.29	2.39	0.75	2.31	2.09	0.37	5.44	6.47	9.32	4.74
18	9.32	9.20	7.95	5.96	2.09	0.37	1.37	1.73	-	7.82	7.44	10.56	5.31
19	9.25	7.70	7.17	8.35	2.75	-	0.65	-	-	8.64	8.08	8.93	5.12
20	6.52	8.88	8.47	6.33	3.83	1.73	2.02	0.72	0.00	6.81	6.90	7.56	4.96
21	9.97	14.18	10.85	8.05	3.43	2.78	1.69	1.73	1.45	9.09	7.28	8.05	6.50
22	10.95	14.89	10.52	9.02	4.84	0.37	2.80	3.16	2.49	10.14	8.79	9.94	7.29
23	10.04	16.79	14.11	10.13	4.77	2.10	1.43	3.52	2.86	8.83	6.64	9.06	7.47
Average	10.03	12.16	11.82	9.47	5.45	3.45	2.44	4.44	2.64	8.79	8.61	9.38	7.36

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Table E-5  
**24 HOUR DISTRIBUTION OF CATEGORY I CONDITIONS**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	4.17	11.21	11.08	4.98	4.05	1.12	0.42	3.88	2.59	4.79	6.97	6.39	5.10
1	7.20	8.52	11.21	6.26	5.26	2.58	1.96	3.45	1.45	4.73	4.61	5.96	5.26
2	5.54	7.91	9.19	7.44	4.77	4.68	2.28	4.50	2.49	5.44	5.73	5.70	5.46
3	7.07	9.06	9.03	5.62	4.94	2.14	3.26	5.21	2.56	6.88	5.59	6.39	5.64
4	7.33	6.66	7.89	9.90	3.47	2.44	3.59	6.45	2.86	8.70	4.78	6.58	5.89
5	6.55	4.15	9.45	8.22	4.45	3.80	4.20	5.15	2.80	7.24	6.37	4.33	5.57
6	7.79	3.80	9.94	9.73	4.12	4.10	3.85	7.17	3.27	6.26	3.64	5.64	5.80
7	9.32	4.58	10.33	11.31	6.25	4.10	3.62	7.43	3.64	7.37	6.37	7.04	6.80
8	10.72	6.70	9.81	7.44	5.49	2.75	1.14	5.73	3.30	8.08	5.93	6.74	6.16
9	9.45	5.37	9.78	7.00	4.35	1.49	0.36	3.75	3.27	4.89	4.95	8.41	5.27
10	9.81	5.91	8.24	6.87	4.12	1.80	0.36	3.16	1.79	5.35	3.94	8.90	5.03
11	7.59	6.30	7.92	5.89	3.76	1.12	0.72	2.44	1.04	7.20	3.91	7.17	4.59
12	7.53	7.73	6.55	5.89	2.39	1.49	0.72	1.76	0.71	5.54	4.88	6.52	4.29
13	5.08	4.58	4.79	7.24	2.09	-	0.36	1.79	0.37	3.55	4.24	6.22	3.35
14	4.76	4.94	5.57	4.71	1.44	0.75	0.65	2.09	0.37	3.13	3.77	6.45	3.21
15	5.15	4.55	5.25	6.33	1.37	1.87	0.72	0.72	0.37	5.80	3.70	4.79	3.38
16	5.54	4.58	4.17	4.01	0.72	1.49	0.65	1.43	-	5.51	3.64	5.87	3.13
17	5.54	4.91	5.18	4.92	2.03	0.75	1.66	1.08	0.37	4.79	4.38	6.65	3.52
18	7.59	4.48	5.83	5.22	1.73	0.37	1.37	1.73	-	6.10	4.68	6.16	3.78
19	6.22	4.12	4.72	7.98	2.09	-	0.65	-	-	6.91	4.21	5.60	3.54
20	5.15	5.55	6.03	5.59	3.17	0.37	0.72	0.72	-	4.07	3.33	5.54	3.35
21	7.89	8.70	8.77	6.26	2.42	0.71	1.37	1.08	1.45	4.40	3.70	6.39	4.41
22	6.55	10.13	7.01	5.82	3.76	0.37	1.79	3.16	2.49	4.66	4.04	7.85	4.78
23	6.26	9.06	10.36	6.94	2.68	0.75	1.43	3.16	2.12	4.07	5.15	8.70	5.04
Average	6.91	6.40	7.84	6.73	3.37	1.71	1.58	3.21	1.64	5.64	4.69	6.50	4.68

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Table E-6  
**24 HOUR DISTRIBUTION OF CATEGORY II CONDITIONS**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	4.37	5.91	4.43	3.47	2.45	-	2.44	0.72	0.67	3.81	2.53	2.15	2.73
1	2.35	5.16	4.14	4.34	2.03	-	2.44	1.08	1.04	4.53	4.92	3.19	2.92
2	3.03	5.26	5.83	3.67	2.45	0.68	1.83	2.05	1.72	4.11	4.92	2.74	3.18
3	3.75	3.72	7.40	3.30	3.04	2.41	1.34	2.70	2.02	4.76	4.98	3.10	3.55
4	2.38	5.66	6.78	2.09	4.15	2.1	1.37	1.73	2.39	2.90	5.56	2.74	3.30
5	3.75	4.05	5.73	4.28	2.75	2.92	0.98	2.77	2.49	3.81	4.58	2.44	3.37
6	3.23	5.51	4.43	5.66	3.40	3.09	1.37	1.73	2.09	4.56	4.51	2.80	3.51
7	2.77	6.70	4.79	4.18	3.11	2.04	0.65	2.02	1.41	4.14	4.65	2.64	3.23
8	4.11	6.59	4.30	3.80	3.11	1.73	0.65	3.23	1.41	3.49	5.62	3.39	3.43
9	2.67	4.76	3.45	4.41	3.17	1.36	0.65	2.51	-	3.39	4.24	2.38	2.74
10	2.09	4.76	4.11	2.46	2.03	1.05	0.65	1.40	0.03	3.03	3.44	1.60	2.21
11	1.43	3.72	2.67	2.46	1.73	-	-	0.33	0.03	2.48	2.12	2.67	1.62
12	0.36	3.33	2.38	1.72	1.01	-	-	-	-	1.76	1.52	1.96	1.16
13	-	1.83	3.32	0.67	1.01	-	-	-	-	1.37	1.04	1.96	0.93
14	0.36	2.51	1.34	1.78	0.65	-	0.36	-	-	1.01	-	1.66	0.80
15	1.01	2.11	1.99	-	0.36	-	-	-	-	-	-	2.02	0.62
16	0.65	1.68	0.94	-	0.65	-	-	-	-	0.65	0.74	1.96	0.60
17	0.65	2.86	1.37	0.37	0.36	-	-	-	-	0.65	1.72	1.01	0.73
18	1.37	2.83	2.12	0.74	0.36	-	-	-	-	0.72	2.09	3.10	1.10
19	1.01	2.08	2.09	0.37	-	-	-	-	-	1.43	2.53	1.66	0.92
20	1.37	2.15	1.79	0.74	-	-	-	-	-	2.74	2.90	1.30	1.08
21	2.09	2.47	2.09	1.78	0.36	-	-	-	-	4.04	3.57	0.65	1.41
22	3.10	2.86	3.52	3.20	1.08	-	0.36	-	-	3.75	4.01	1.43	1.94
23	2.80	4.05	2.74	3.20	2.09	-	-	0.36	0.74	4.04	1.48	0.36	1.81
Average	2.11	3.86	3.49	2.45	1.72	0.72	0.63	0.94	0.67	2.80	3.07	2.12	2.04

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.



Table E-7  
**24 HOUR DISTRIBUTION OF CATEGORY III CONDITIONS**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	1.66	1.50	-	-	-	-	-	-	-	0.65	0.37	0.65	0.40
1	1.01	2.61	-	-	-	0.68	-	-	-	1.3	0.71	0.33	0.54
2	0.98	2.18	0.36	-	-	0.68	-	-	0.37	0.65	1.35	1.01	0.62
3	2.02	2.22	0.68	0.67	-	1.05	-	-	0.37	-	0.67	0.98	0.71
4	3.29	1.47	0.36	0.37	-	1.36	-	-	0.37	-	1.72	0.65	0.79
5	0.68	3.29	1.37	0.67	0.65	3.39	0.65	-	-	-	1.08	1.34	1.07
6	2.31	1.50	-	-	-	2.04	0.65	-	0.37	-	1.79	-	0.71
7	1.66	2.61	-	-	0.65	2.78	0.65	-	0.37	-	-	0.36	0.74
8	0.98	1.90	1.96	0.74	1.31	3.46	-	3.26	3.44	-	0.67	0.39	1.50
9	1.08	2.69	0.65	1.72	1.96	1.36	0.65	0.68	1.01	-	2.09	0.36	1.17
10	0.65	2.54	1.34	1.01	0.65	0.68	-	0.65	-	1.30	1.04	0.36	0.84
11	-	0.39	1.01	-	0.65	-	-	-	-	-	1.35	1.01	0.37
12	1.37	1.90	0.65	-	-	0.68	-	0.65	1.04	-	1.35	0.36	0.66
13	0.36	0.39	-	0.67	-	-	-	-	0.67	-	0.37	0.36	0.23
14	-	0.39	-	-	-	1.36	-	-	-	-	0.67	0.36	0.26
15	0.65	1.90	0.36	-	-	-	-	-	-	-	0.67	0.65	0.34
16	0.33	1.54	0.72	1.01	0.69	-	-	-	-	-	0.67	1.96	0.57
17	0.65	1.50	-	-	-	-	0.65	1.01	-	-	0.37	1.66	0.48
18	0.36	1.90	-	-	-	-	-	-	-	1.01	0.67	1.30	0.43
19	2.02	1.50	0.36	-	0.65	-	-	-	-	0.29	1.35	1.66	0.65
20	-	1.18	0.65	-	0.65	1.36	1.30	-	-	-	0.67	0.72	0.54
21	-	3.01	-	-	0.65	2.07	0.33	0.65	-	0.65	-	1.01	0.68
22	1.30	1.90	-	-	-	-	0.65	-	-	1.73	0.74	0.65	0.57
23	0.98	3.69	1.01	-	-	1.36	-	-	-	0.72	-	-	0.63
Average	1.01	1.90	0.49	0.29	0.35	1.01	0.23	0.29	0.33	0.35	0.85	0.76	0.65

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Table E-8  
**24 HOUR DISTRIBUTION OF CATEGORY II / III CONDITIONS**  
 Colorado Springs Airport

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Hourly Average
0	6.03	7.41	4.43	3.47	2.45	-	2.44	0.72	0.67	4.47	2.90	2.80	3.13
1	3.36	7.77	4.14	4.34	2.03	0.68	2.44	1.08	1.04	5.83	5.62	3.52	3.46
2	4.01	7.45	6.19	3.67	2.45	1.36	1.83	2.05	2.09	4.76	6.26	3.75	3.80
3	5.77	5.94	8.08	3.97	3.04	3.46	1.34	2.70	2.39	4.76	5.66	4.07	4.26
4	5.67	7.12	7.14	2.46	4.15	3.46	1.37	1.73	2.76	2.90	7.28	3.39	4.10
5	4.43	7.34	7.10	4.95	3.40	6.31	1.63	2.77	2.49	3.81	5.66	3.78	4.44
6	5.54	7.02	4.43	5.66	3.40	5.12	2.02	1.73	2.46	4.56	6.30	2.80	4.22
7	4.43	9.31	4.79	4.18	3.76	4.82	1.30	2.02	1.79	4.14	4.65	3.00	3.97
8	5.08	8.49	6.26	4.55	4.41	5.19	0.65	6.48	4.85	3.49	6.30	3.78	4.93
9	3.75	7.45	4.11	6.13	5.13	2.71	1.30	3.19	1.01	3.39	6.33	2.74	3.91
10	2.74	7.30	5.44	3.47	2.68	1.73	0.65	2.05	0.03	4.34	4.48	1.96	3.04
11	1.43	4.12	3.68	2.46	2.39	-	-	0.33	0.03	2.48	3.47	3.68	1.99
12	1.73	5.23	3.03	1.72	1.01	0.68	-	0.65	1.04	1.76	2.86	2.31	1.81
13	0.36	2.22	3.32	1.35	1.01	-	-	-	0.67	1.37	1.41	2.31	1.16
14	0.36	2.9	1.69	1.78	0.65	1.36	0.36	-	-	1.01	0.67	2.02	1.05
15	1.66	4.01	2.35	-	0.36	-	-	-	-	-	0.67	2.67	0.96
16	0.98	3.22	1.66	1.01	1.34	-	-	-	-	0.65	1.41	3.91	1.17
17	1.30	4.37	1.37	0.37	0.36	-	0.65	1.01	-	0.65	2.09	2.67	1.22
18	1.73	4.73	2.12	0.74	0.36	-	-	-	-	1.73	2.76	4.40	1.53
19	3.03	3.58	2.44	0.37	0.65	-	-	-	-	1.73	3.87	3.32	1.57
20	1.37	3.33	2.44	0.74	0.65	1.36	1.30	-	-	2.74	3.57	2.02	1.61
21	2.09	5.48	2.09	1.78	1.01	2.07	0.33	0.65	-	4.69	3.57	1.66	2.09
22	4.40	4.76	3.52	3.20	1.08	-	1.01	-	-	5.48	4.75	2.09	2.51
23	3.78	7.73	3.75	3.20	2.09	1.36	-	0.36	0.74	4.76	1.48	0.36	2.43
Average	3.13	5.76	3.98	2.73	2.08	1.74	0.86	1.23	1.00	3.15	3.92	2.88	2.68

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for Nov 1, 2000, through Oct 31, 2009, from the National Climatic Data Center.

Figure E-1 depicts graphically the occurrence of VMC, IMC and Category II/III conditions by month. As shown the period from October through April provides the majority of IMC weather. It is during these months that the Airport is most vulnerable to being closed to aircraft operations. These same months experience the greatest share of Category II/III conditions for which the Airport cannot accommodate aircraft operations. Figure E-2 provides greater detail of the inclement weather conditions by month.

Figure E-3 shows the percent occurrence of inclement weather conditions on an hourly basis. As shown, from 11 a.m. to 8 p.m. the Airport experiences minimal Category II/III conditions (less than 2%). Conversely, the hours from 8 p.m. to 11 a.m. each experience Category II/III conditions more than 2% of the time. From the hours of 3 a.m. to 7 a.m., the airport experiences Category II/III conditions at least 4% of the time, with the worst hour being 8 a.m. with nearly 5%.

Figure E-1  
**WEATHER CONDITIONS SUMMARY**  
 Colorado Springs Airport

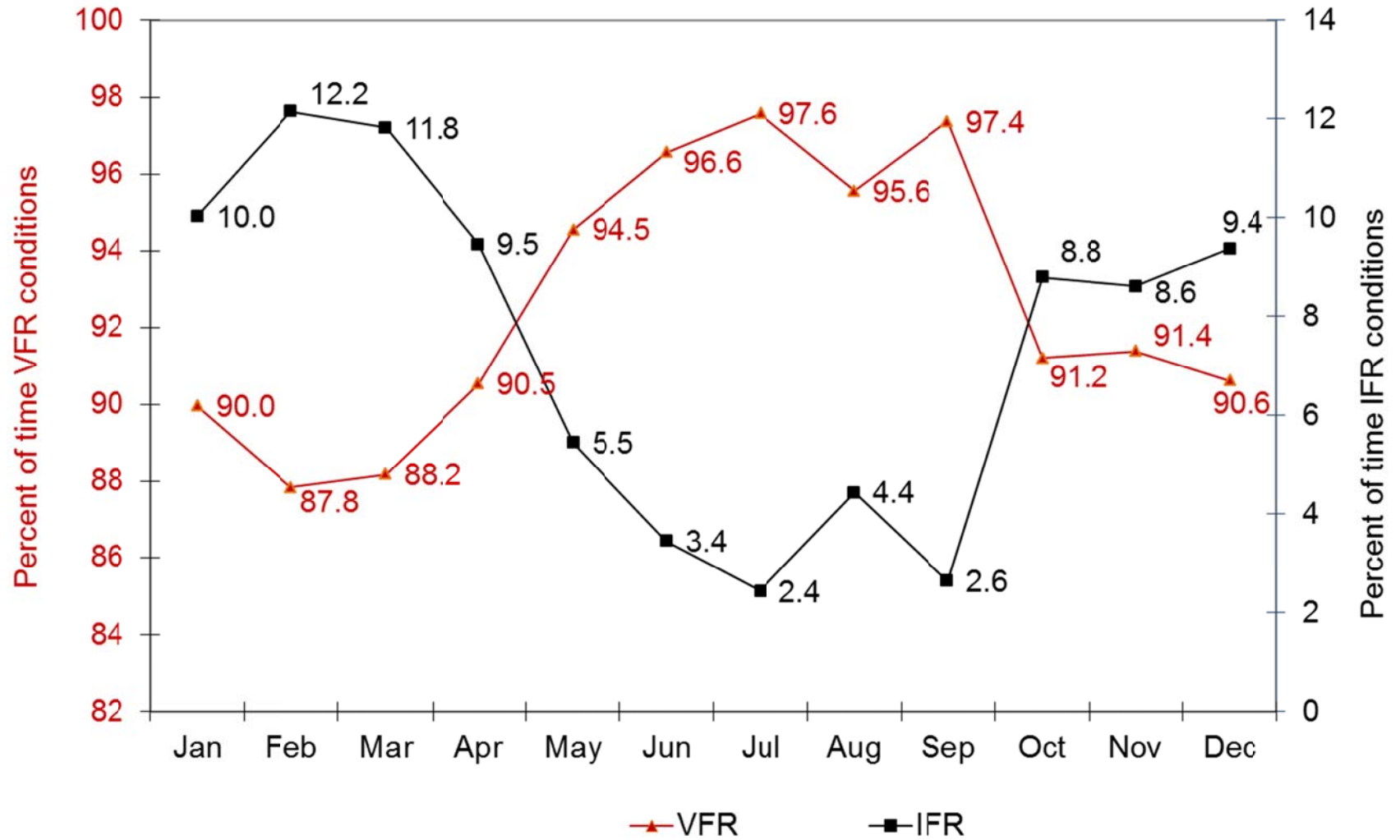


Figure E-2  
**INSTRUMENT METEOROLOGICAL CONDITIONS SUMMARY**  
 Colorado Springs Airport

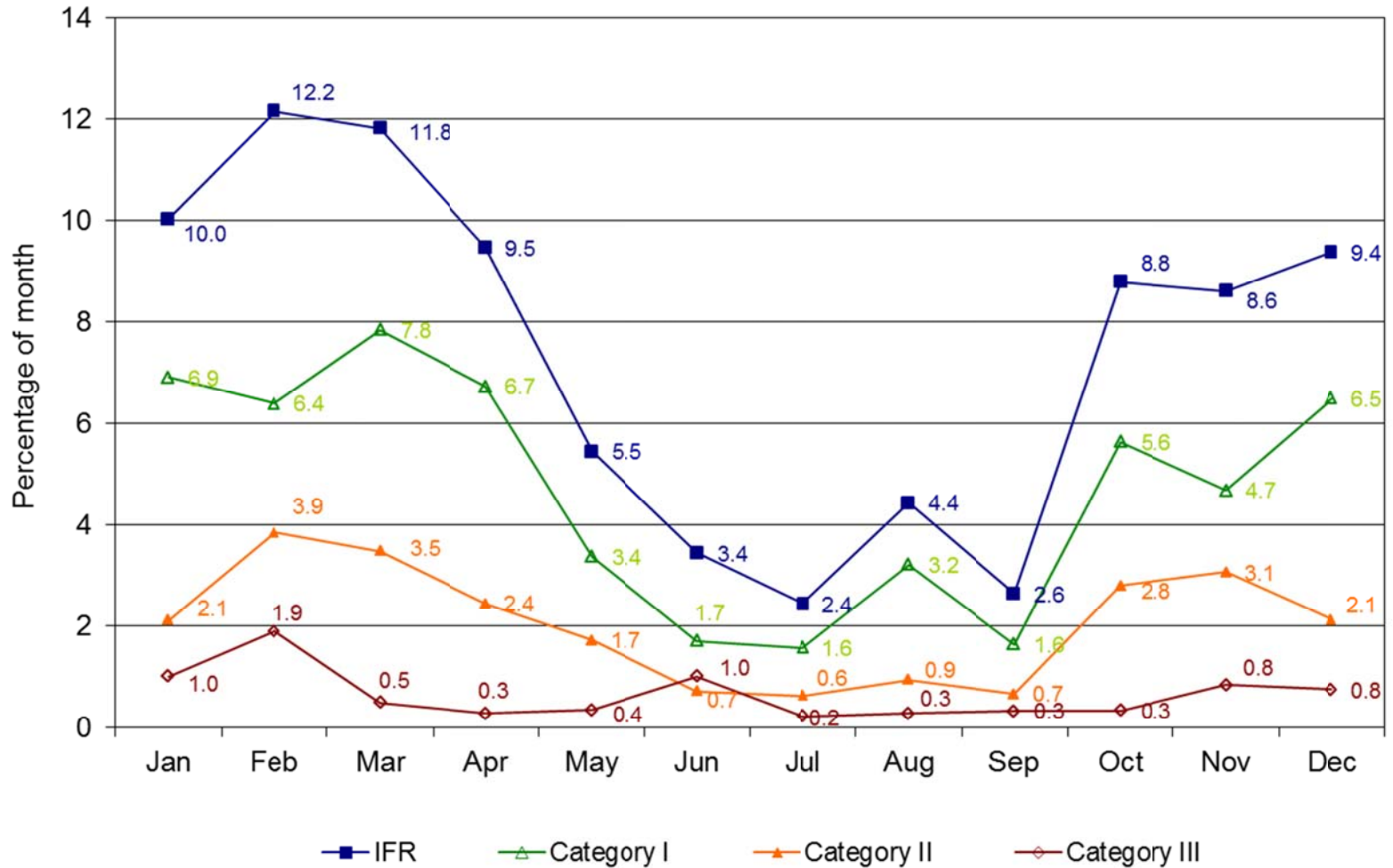
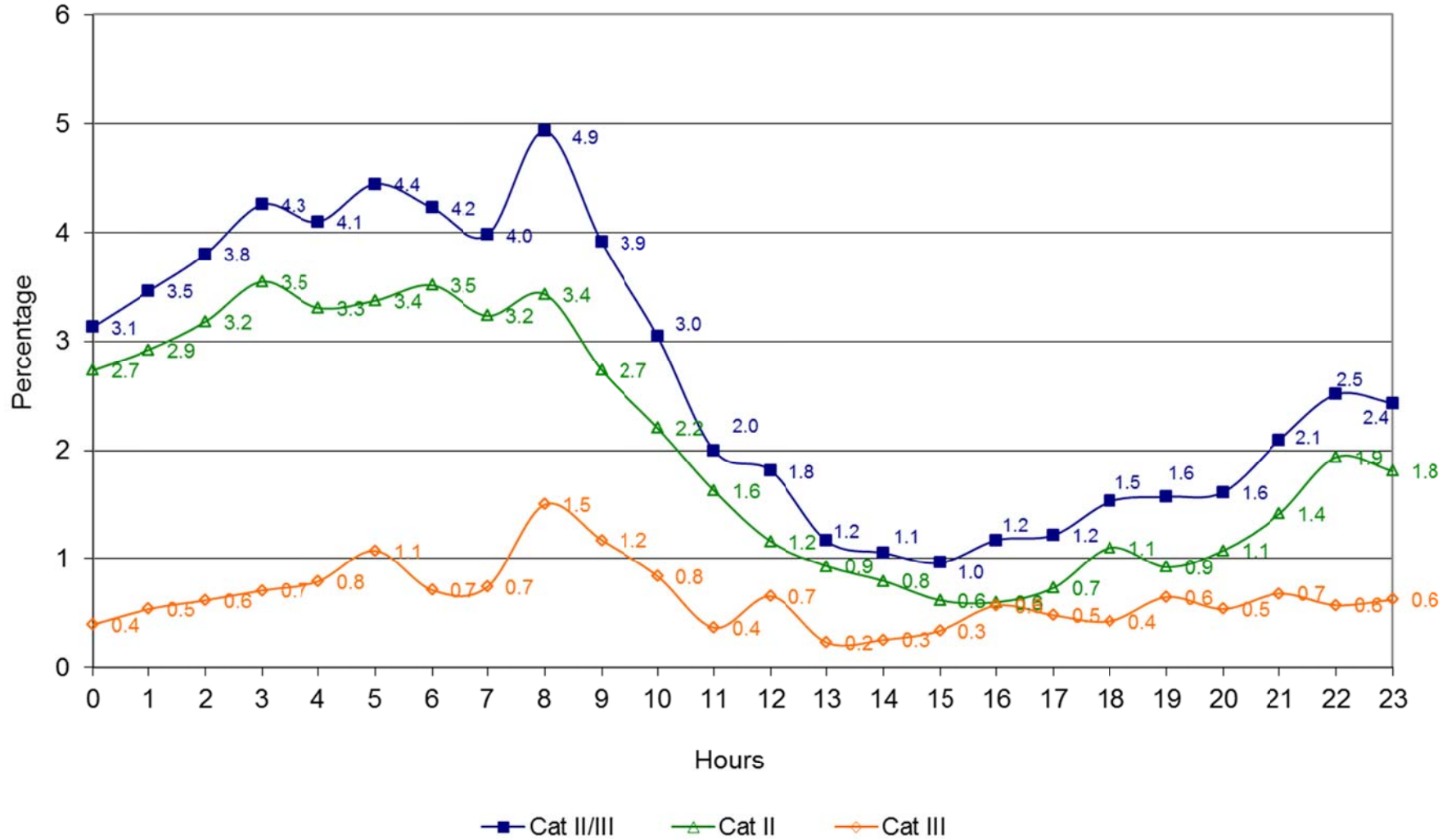


Figure E-3  
**CATEGORY II / III WEATHER CONDITIONS BY HOUR OF DAY**  
 Colorado Springs Airport



## **RUNWAY WIND COVERAGE**

Runway wind coverage refers to the percent of time that the crosswinds associated with a particular runway orientation are within an acceptable level. Airport wind coverage is determined by considering all runways simultaneously. Crosswinds— which are the components of wind that flow in a direction perpendicular to a runway’s orientation— can effectively close a runway for use. The maximum allowable crosswind components for a particular aircraft are determined largely by aircraft size, aircraft weight, and pilot capabilities. In general, larger, heavier air carrier aircraft can land and take off in higher crosswinds than smaller, lighter general aviation aircraft.

The FAA provides the following guidance regarding wind coverage in AC 150/5300-13, *Airport Design*:

The desirable wind coverage for an airport is 95 percent, based on the total numbers of weather observations. This value of 95 percent takes into account various factors influencing operations and the economics of providing the coverage.\*

Based on this guidance, wind coverage for the airfield was estimated using the following maximum allowable crosswind component conditions:

- 10.5-knot crosswind component, which represents the crosswind component at which pilots of small, light general aviation aircraft would be unable to use the runway
- 13-knot crosswind component, which represents the crosswind component at which pilots of twin-engine propeller aircraft would be unable to use the runway
- 16-knot crosswind component, which represents the crosswind component at which pilots of larger commuter propeller aircraft and smaller business jet aircraft would be unable to use the runway
- 20-knot crosswind component, which represents the crosswind component at which pilots of regional and air carrier jets would be unable to use the runway

### **Summary of Wind Coverage Findings**

Table E-9 summarizes the wind coverage of the Airport’s runways at these crosswind speeds. In this table, wind data for daytime hours was presented. Separate coverage estimates are provided for visual meteorological conditions (VMC), instrument meteorological conditions (IMC), and all weather conditions.

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\*Federal Aviation Administration, Advisory Circular 150/5300-13, *Airport Design*, Change 18, Appendix 2, p. 87.

These results indicate that the Airport's current runway system provides wind coverage in excess of the FAA's 95% coverage criteria for all four crosswind components that were evaluated. In addition, the results of the wind analysis indicate that Airport's primary runway – Runway 17L-35R – could be used 96% of the time with a 10.5-knot crosswind component.

Table E-9  
**WIND DATA SUMMARY DAYTIME HOURS (7 AM – 10 PM)**  
 Colorado Springs Airport

	% Calm	10.5	13.0	16.0	20.0
<b>All weather</b>	15.7				
35R/35L - north flow (a)		85.54	85.68	86.12	86.50
17L/17R - south flow		11.27	12.01	12.55	12.84
31 - northwest flow		1.92	1.76	1.23	0.47
13 - southeast flow		1.27	0.56	0.10	0.00
Total		100.00	100.00	100.00	99.81
<b>VMC (b)</b>					
35R/35L - north flow (a)	15.0	85.19	85.30	85.77	86.18
17L/17R - south flow		11.50	12.26	12.81	13.11
31 - northwest flow		1.98	1.82	1.29	0.52
13 - southeast flow		1.33	0.61	0.13	0.00
Total		100.00	100.00	100.00	99.81
<b>IMC (c)</b>	25.6				
35R/35L - north flow (a)		90.11	90.59	90.95	91.25
17L/17R - south flow		7.70	8.17	8.49	8.65
31 - northwest flow		1.66	1.24	0.57	0.10
13 - southeast flow		0.53	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00

Notes:

- (a) North flow includes the percentage of calm weather. Calm weather includes all winds below 5 knots; analysis assumed 10-knot tailwind component.
- (b) VMC (Visual Meteorological Conditions) weather is defined as a cloud ceiling of at least 1,000 feet and reported visibility of at least 3 miles.
- (c) IMC (Instrument Meteorological Conditions) weather is defined as a cloud ceiling less than 1,000 feet or reported visibility less than 3 miles.

Source: LeighFisher, January 2010 based on Surface Airways Hourly Data (TD-3280) for November 1, 2000, through October 31, 2009, from the National Climatic Data Center.

### Detailed Wind Coverage Data

Tables E-10 through E-13 provide additional detail regarding the wind coverage under various assumptions.



Table E-10  
**WIND COVERAGE—DAYTIME HOURS—5 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	Crosswind component						Crosswind component				
	%Calm	10.5 knots	13 knots	16 knots	20 knots		%Calm	10.5 knots	13 knots	16 knots	20 knots
<b>All weather</b>						<b>All weather</b>					
35R/35L - north flow (a)	15.7	58.17	60.35	62.33	63.28	17L/17R - south flow (a)	15.7	67.03	69.55	72.40	74.49
17L/17R - south flow		30.61	32.43	34.26	35.99	35R/35L - north flow		21.75	23.23	24.20	24.80
31 - northwest flow		1.95	1.77	1.23	0.47	31 - northwest flow		1.95	1.77	1.23	0.47
13 - southeast flow		1.29	0.56	0.10	0.00	13 - southeast flow		1.29	0.56	0.10	0.00
Total		92.02	95.11	97.92	99.74	Total		92.02	95.11	97.93	99.76
Unfavorable		7.98	4.89	2.08	0.26	Unfavorable		7.98	4.89	2.07	0.24
<b>VFR</b>						<b>VFR</b>					
35R/35L - north flow (a)	15.0	57.65	59.86	61.91	62.92	17L/17R - south flow (a)	15.0	66.62	69.23	72.21	74.39
17L/17R - south flow		30.74	32.60	34.50	36.30	35R/35L - north flow		21.76	23.23	24.22	24.81
31 - northwest flow		2.01	1.84	1.29	0.52	31 - northwest flow		2.01	1.84	1.29	0.52
13 - southeast flow		1.35	0.62	0.13	0.00	13 - southeast flow		1.35	0.62	0.13	0.00
Total		91.75	94.92	97.83	99.74	Total		91.74	94.92	97.85	99.72
Unfavorable		8.25	5.08	2.17	0.26	Unfavorable		8.26	5.08	2.15	0.28
<b>IFR</b>						<b>IFR</b>					
35R/35L - north flow (a)	25.6	65.07	67.08	68.40	68.61	17L/17R - south flow (a)	25.6	72.68	74.00	75.03	75.07
17L/17R - south flow		28.84	30.05	30.87	31.29	35R/35L - north flow		21.25	23.12	24.23	24.83
31 - northwest flow		1.68	1.26	0.57	0.10	31 - northwest flow		1.68	1.26	0.57	0.10
13 - southeast flow		0.54	0.00	0.00	0.00	13 - southeast flow		0.54	0.00	0.00	0.00
Total		96.13	98.39	99.84	100.00	Total		96.15	98.38	99.83	100.00
Unfavorable		3.87	1.61	0.16	0.00	Unfavorable		3.85	1.62	0.17	0.00

Table E-10 (continued)  
**WIND COVERAGE—DAYTIME HOURS—5 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	%Calm	Crosswind component					%Calm	Crosswind component			
		10.5 knots	13 knots	16 knots	20 knots			10.5 knots	13 knots	16 knots	20 knots
<b>Category I</b>						<b>Category I</b>					
35R/35L - north flow (a)	19.4	63.56	66.25	67.76	67.88	17L/17R - south flow (a)	19.4	68.52	70.07	71.10	71.09
17L/17R - south flow		29.33	30.61	31.52	32.00	35R/35L - north flow		24.37	26.80	28.17	28.79
31 - northwest flow		2.50	1.61	0.65	0.12	31 - northwest flow		2.50	1.61	0.65	0.12
13 - southeast flow		0.18	0.00	0.00	0.00	13 - southeast flow		0.18	0.00	0.00	0.00
Total		95.57	98.47	99.93	100.00	Total		95.57	98.48	99.92	100.00
Unfavorable		4.43	1.53	0.07	0.00	Unfavorable		4.43	1.52	0.08	0.00
<b>Category II/III</b>						<b>Category II/III</b>					
35R/35L - north flow (a)	38.1	68.15	68.79	69.77	70.09	17L/17R - south flow (a)	38.1	81.08	82.05	83.06	83.17
17L/17R - south flow		27.84	28.93	29.57	29.89	35R/35L - north flow		14.91	15.67	16.28	16.81
31 - northwest flow		0.04	0.56	0.40	0.02	31 - northwest flow		0.04	0.56	0.40	0.02
13 - southeast flow		1.23	0.19	0.00	0.00	13 - southeast flow		1.23	0.19	0.00	0.00
Total		97.26	98.47	99.74	100.00	Total		97.26	98.47	99.74	100.00
Unfavorable		2.74	1.53	0.26	0.00	Unfavorable		2.74	1.53	0.26	0.00

(a) Includes calm wind observations (i.e. winds less than 5 knots).

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for November 1, 2000, through October 31, 2009, January 2010.

Table E-11  
**WIND COVERAGE—NIGHT TIME HOURS—5 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	Crosswind component						Crosswind component				
	%Calm	10.5 knots	13 knots	16 knots	20 knots		%Calm	10.5 knots	13 knots	16 knots	20 knots
<b>All weather</b>						<b>All weather</b>					
35R/35L - north flow (a)	23.3	87.08	88.09	88.84	89.01	17L/17R - south flow (a)	23.3	54.37	54.93	55.68	56.05
17L/17R - south flow		9.41	9.93	10.43	10.84	35R/35L - north flow		42.14	43.10	43.58	43.80
31 - northwest flow		1.49	0.86	0.42	0.15	31 - northwest flow		1.49	0.86	0.42	0.15
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		97.98	98.88	99.69	100.00	Total		98.00	98.89	99.68	100.00
Unfavorable		2.02	1.12	0.31	0.00	Unfavorable		2.00	1.11	0.32	0.00
<b>VFR</b>						<b>VFR</b>					
35R/35L - north flow (a)	22.5					17L/17R - south flow (a)	22.5	52.40	53.01	53.83	54.22
17L/17R - south flow		88.18	89.24	90.03	90.21	35R/35L - north flow		43.96	44.92	45.41	45.62
31 - northwest flow		8.18	8.70	9.21	9.63	31 - northwest flow		1.55	0.88	0.42	0.16
13 - southeast flow		1.55	0.88	0.42	0.16	13 - southeast flow		0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00						
Total						Total		97.91	98.81	99.66	100.00
Unfavorable		97.91	98.82	99.66	100.00	Unfavorable		2.09	1.19	0.34	0.00
		2.09	1.18	0.34	0.00						
<b>IFR</b>						<b>IFR</b>					
35R/35L - north flow (a)	32.2	75.54	76.10	76.78	76.86	17L/17R - south flow (a)	32.2	73.70	73.94	74.41	74.47
17L/17R - south flow		21.95	22.51	22.83	23.04	35R/35L - north flow		23.77	24.68	25.20	25.43
31 - northwest flow		1.03	0.78	0.39	0.10	31 - northwest flow		1.03	0.78	0.39	0.10
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		98.52	99.39	100.00	100.00	Total		98.50	99.40	100.00	100.00
Unfavorable		1.48	0.61	0.00	0.00	Unfavorable		1.50	0.60	0.00	0.00

Table E-11 (continued)  
**WIND COVERAGE—NIGHT TIME HOURS—5 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	%Calm	Crosswind component					%Calm	Crosswind component			
		10.5 knots	13 knots	16 knots	20 knots			10.5 knots	13 knots	16 knots	20 knots
<b>Category I</b>						<b>Category I</b>					
35R/35L - north flow (a)	28.1	75.79	76.67	77.52	77.70	17L/17R - south flow (a)	28.1	69.77	70.26	70.78	70.87
17L/17R - south flow		20.76	21.47	21.88	22.17	35R/35L - north flow		26.77	27.90	28.62	29.00
31 - northwest flow		1.61	1.15	0.60	0.13	31 - northwest flow		1.61	1.15	0.60	0.13
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		98.16	99.29	100.00	100.00	Total		98.15	99.31	100.00	100.00
Unfavorable		1.84	0.71	0.00	0.00	Unfavorable		1.85	0.69	0.00	0.00
<b>Category II/III</b>						<b>Category II/III</b>					
35R/35L - north flow (a)	38.2	74.99	75.10	75.52	75.46	17L/17R - south flow (a)	38.2	79.46	79.34	79.74	79.74
17L/17R - south flow		23.78	24.14	24.34	24.45	35R/35L - north flow		19.32	19.91	20.14	20.17
31 - northwest flow		0.20	0.26	0.09	0.09	31 - northwest flow		0.20	0.26	0.09	0.09
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		98.97	99.50	99.95	100.00	Total		98.98	99.51	99.97	100.00
Unfavorable		1.03	0.50	0.05	0.00	Unfavorable		1.02	0.49	0.03	0.00

(a) Includes calm wind observations (i.e. winds less than 5 knots).

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for November 1, 2000, through October 31, 2009, January 2010.

Table E-12  
**WIND COVERAGE—DAYTIME HOURS—10 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	Crosswind component						Crosswind component				
	%Calm	10.5 knots	13 knots	16 knots	20 knots		%Calm	10.5 knots	13 knots	16 knots	20 knots
<b>All weather</b>						<b>All weather</b>					
35R/35L - north flow (a)	15.7	85.54	85.68	86.12	86.50	17L/17R - south flow (a)	15.7	87.01	87.03	87.35	87.68
17L/17R - south flow		11.27	12.01	12.55	12.84	35R/35L - north flow		9.80	10.66	11.32	11.68
31 - northwest flow		1.92	1.76	1.23	0.47	31 - northwest flow		1.92	1.76	1.23	0.47
13 - southeast flow		1.27	0.56	0.10	0.00	13 - southeast flow		1.27	0.56	0.10	0.00
Total		100.00	100.00	100.00	99.81	Total		100.00	100.00	100.00	99.83
Unfavorable		0.00	0.00	0.00	0.19	Unfavorable		0.00	0.00	0.00	0.17
<b>VFR</b>						<b>VFR</b>					
35R/35L - north flow (a)	15.1	85.19	85.30	85.77	86.18	17L/17R - south flow (a)	15.1	87.02	87.06	87.42	87.77
17L/17R - south flow		11.50	12.26	12.81	13.11	35R/35L - north flow		9.66	10.50	11.16	11.52
31 - northwest flow		1.98	1.82	1.29	0.52	31 - northwest flow		1.98	1.82	1.29	0.52
13 - southeast flow		1.33	0.61	0.13	0.00	13 - southeast flow		1.33	0.61	0.13	0.00
Total		100.00	100.00	100.00	99.81	Total		100.00	100.00	100.00	99.81
Unfavorable		0.00	0.00	0.00	0.19	Unfavorable		0.00	0.00	0.00	0.19
<b>IFR</b>						<b>IFR</b>					
35R/35L - north flow (a)	25.6	90.11	90.59	90.95	91.25	17L/17R - south flow (a)	25.6	86.04	85.67	85.43	85.44
17L/17R - south flow		7.70	8.17	8.49	8.65	35R/35L - north flow		11.77	13.09	14.00	14.46
31 - northwest flow		1.66	1.24	0.57	0.10	31 - northwest flow		1.66	1.24	0.57	0.10
13 - southeast flow		0.53	0.00	0.00	0.00	13 - southeast flow		0.53	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00

Table E-12 (continued)  
**WIND COVERAGE—DAYTIME HOURS—10 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	%Calm	Crosswind component					%Calm	Crosswind component			
		10.5 knots	13 knots	16 knots	20 knots			10.5 knots	13 knots	16 knots	20 knots
<b>Category I</b>					<b>Category I</b>						
35R/35L - north flow (a)	19.4	89.20	89.79	90.31	90.65	17L/17R - south flow (a)	19.4	83.63	82.99	82.77	82.79
17L/17R - south flow		8.17	8.63	9.04	9.23	35R/35L - north flow		13.74	15.43	16.58	17.09
31 - northwest flow		2.45	1.58	0.65	0.12	31 - northwest flow		2.45	1.58	0.65	0.12
13 - southeast flow		0.18	0.00	0.00	0.00	13 - southeast flow		0.18	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00
<b>Category II/III</b>					<b>Category II/III</b>						
35R/35L - north flow (a)	38.1	91.97	92.07	92.22	92.46	17L/17R - south flow (a)	38.1	91.06	91.06	90.92	90.89
17L/17R - south flow		6.77	7.18	7.39	7.52	35R/35L - north flow		7.68	8.19	8.68	9.09
31 - northwest flow		0.04	0.56	0.40	0.02	31 - northwest flow		0.04	0.56	0.40	0.02
13 - southeast flow		1.22	0.19	0.00	0.00	13 - southeast flow		1.22	0.19	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00

(a) Includes calm wind observations (i.e. winds less than 5 knots).

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for November 1, 2000, through October 31, 2009, January 2010.

Table E-13  
**WIND COVERAGE— NIGHT TIME HOURS—10 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	Crosswind component						Crosswind component				
	%Calm	10.5 knots	13 knots	16 knots	20 knots		%Calm	10.5 knots	13 knots	16 knots	20 knots
<b>All weather</b>						<b>All weather</b>					
35R/35L - north flow (a)	23.3	96.43	96.91	97.27	97.52	17L/17R - south flow (a)	23.3	88.09	88.04	88.09	88.18
17L/17R - south flow		2.11	2.24	2.31	2.33	35R/35L - north flow		10.45	11.11	11.49	11.67
31 - northwest flow		1.47	0.85	0.42	0.15	31 - northwest flow		1.47	0.85	0.42	0.15
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00
<b>VFR</b>						<b>VFR</b>					
35R/35L - north flow (a)	22.5	96.63	97.16	97.54	97.78	17L/17R - south flow (a)	22.5	88.00	88.03	88.09	88.17
17L/17R - south flow		1.84	1.97	2.04	2.06	35R/35L - north flow		10.47	11.10	11.50	11.67
31 - northwest flow		1.53	0.87	0.42	0.16	31 - northwest flow		1.53	0.87	0.42	0.16
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00
<b>IFR</b>						<b>IFR</b>					
35R/35L - north flow (a)	32.2	94.16	94.33	94.67	94.94	17L/17R - south flow (a)	32.2	88.58	88.10	88.04	88.16
17L/17R - south flow		4.82	4.90	4.94	4.96	35R/35L - north flow		10.41	11.13	11.57	11.74
31 - northwest flow		1.01	0.77	0.39	0.10	31 - northwest flow		1.01	0.77	0.39	0.10
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00

Table E-13 (continued)  
**WIND COVERAGE— NIGHT TIME HOURS—10 KNOT TAILWIND COMPONENT**  
 Colorado Springs Airport

	%Calm	Crosswind component					%Calm	Crosswind component			
		10.5 knots	13 knots	16 knots	20 knots			10.5 knots	13 knots	16 knots	20 knots
<b>Category I</b>						<b>Category I</b>					
35R/35L - north flow (a)	28.1	93.75	94.08	94.58	95.01	17L/17R - south flow (a)	28.1	86.78	86.31	86.23	86.42
17L/17R - south flow		4.67	4.78	4.82	4.86	35R/35L - north flow		11.64	12.55	13.18	13.45
31 - northwest flow		1.58	1.13	0.60	0.13	31 - northwest flow		1.58	1.13	0.60	0.13
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	Total		0.00	0.00	0.00	0.00
Unfavorable		100.00	100.00	100.00	100.00	Unfavorable		100.00	100.00	100.00	100.00
<b>Category II/III</b>						<b>Category II/III</b>					
35R/35L - north flow (a)	38.2	94.70	94.57	94.72	94.71	17L/17R - south flow (a)	38.2	91.26	90.71	90.70	90.68
17L/17R - south flow		5.11	5.17	5.19	5.20	35R/35L - north flow		8.54	9.03	9.21	9.23
31 - northwest flow		0.20	0.26	0.09	0.09	31 - northwest flow		0.20	0.26	0.09	0.09
13 - southeast flow		0.00	0.00	0.00	0.00	13 - southeast flow		0.00	0.00	0.00	0.00
Total		100.00	100.00	100.00	100.00	Total		100.00	100.00	100.00	100.00
Unfavorable		0.00	0.00	0.00	0.00	Unfavorable		0.00	0.00	0.00	0.00

Notes: Calm includes all winds below 5 knots; analysis assumed 10-knot tailwind component.

(a) Includes calm wind observations (i.e. winds less than 5 knots).

Source: LeighFisher analysis of Surface Airways Hourly Data (TD-3280) for November 1, 2000, through October 31, 2009, January 2010.