Flight Plan for Tuesday 1 April 2004:Including shortcut opportunities Front Range survey Default climb rates 1500 ft/min Default flight altitude 1000 ft to 1500 ft AGL, within the mixed layer if possible.		
Access to plane:00:00 CDT Preflight :0000 hrs Pt. 0 : Rocky Mountain Metro (39 54.5 N, 105 07.0 W) Doors close: 00:00 CDT Takeoff: 11:00 MDT		
Head to Pt. 2 On the way to Pt. 2 climb to 15 kft,, Flight scientist notes mixed layer depth. Continue to Pt. 3 On the way to Pt. 3 start calibration, Flight Scientist calls for end of calibration After calibration spiral descent at Pt. 3 to mixed layer (1-1.5 kft AGL, default)		
Head to Pt. 4 within mixed layer. Missed approach at Loveland Ft. Collins airport (Pt. 5). Flight scientist notes mixed layer depth.		
 ==> Pt. 6 to Pt. 7 north of the Platte river. agricultural and oil exploration emissions, At. Pt. 7, racetrack profile to 18 kft, followed by spiral descent to 1-1.5 kft AGL (within mixed layer). Pt. 8 to Pt. 9, south of Platte river, agricultural and oil exploration emissions. 	Shortcut Opportunity Turn south at 104.5 W and continue to Pt. 10 Profile: 30min Distance: 30 min	<==
==> Pt. 9 to Pt. 11 transect upwind of front rage pollution sources for winds from the east. Missed approach at Pueblo airport (Pt. 11). Spiral up and down profile at Pt. 12.	Shortcut Opportunity Cut Pueblo flyby Go directly from Pt. 10 to Pt. 14 Save 38 min	<==

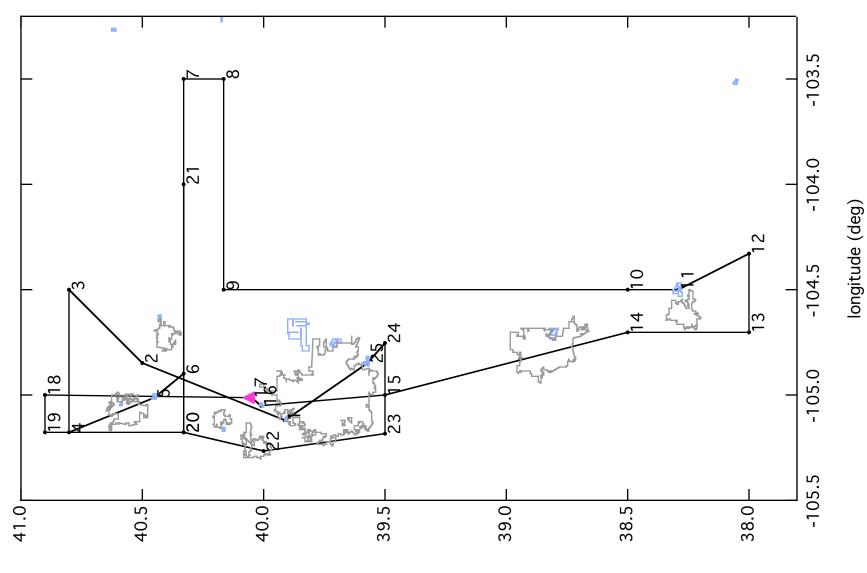
On the way N from Pt. 13 look for pollution from Pueblo. Profile in Pueblo plume up to 18 kft, (default spiral at Pt. 14) Pt. 14 to Pt. 15 across Colorado Springs within mixed layer. Pt. 15 to Pt. 17 across Denver to BAO tower (Pt. 17) Include missed approach at Erie municipal airport (Pt. 16) Spiral profile around BAO tower (Pt. 17) up to 15 kft., spiral descent at Pt. 17. Pt. 17 to Pt. 18 to Pt. 9 to Pt. 20 within mixed layer, Rawhide power plant near Pt. 18 At Pt. 20, Racetrack profile to 18 kft. Opportunity to save time <== ==> Skip Pt. 21, Calibration during Pt. 20 to Pt. 21 at 18 kft, calibration, Flight Scientist calls for end of calibration Spiral descent to mixed layer at Pt. 21 holding pattern at Pt. 20 Return to Pt. 20 in mixed layer N. of Platte river within mixed layer. 16 min _____ _____

Pt. 20 to Pt. 22 (Boulder) to Pt. 23 (S of Chatfield reservoir) along foot hills, urban pollution with winds from the east.

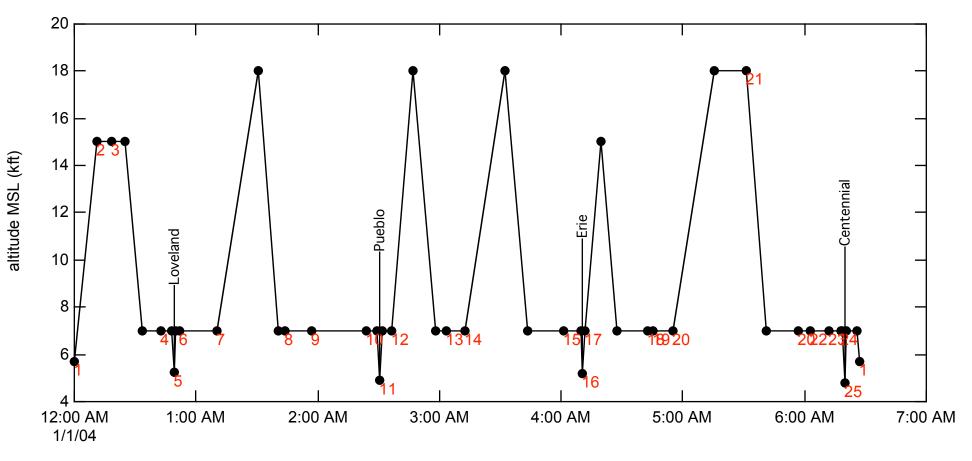
Pt. 24 to Pt. 25, missed approach at Pt. 25 Centennial airport.

Pt. 25 to Pt. 1 across Denver within mixed layer.

Return to Rocky Mountain Metropolitan airport. Flight time : \sim 6.5 hrs



latitude (deg)



time

lat_plan	Ing_plan	deldist_km	intdist_km	name_plan	lat_plan_deg	lat_plan_min	lng_plan_deg	lng_plan_min	pnt	
39.9088	-105.117	0	0	Rocky Mtn Metro	39	54.5	-105	7.0	1	
40.5	-104.85	70	70		40	30.0	-104	51.0	2	
40.8	-104.5	45	114		40	48.0	-104	30.0	3	
40.8	-105.18	57	171		40	48.0	-105	10.8	4	
40.4518	-105.011	41	213	KFNL Ft. Collins	40	27.1	-105	0.7	5	
40.33	-104.9	17	229		40	19.8	-104	54.0	6	
40.33	-103.5	119	348	racetrack profil	40	19.8	-103	30.0	7	
40.1666	-103.5	18	366		40	10.0	-103	30.0	8	
40.1666	-104.5	85	451		40	10.0	-104	30.0	9	
38.5	-104.5	185	636		38	30.0	-104	30.0	10	
38.2891	-104.497	24	660	KPUB Pueblo	38	17.3	-104	29.8	11	
38	-104.33	35	695	profile	38	0.0	-104	19.8	12	
38	-104.7	32	727		38	0.0	-104	42.0	13	
38.5	-104.7	56	783	profile	38	30.0	-104	42.0	14	
39.5	-105	114	897		39	30.0	-105	0.0	15	
40.0102	-105.048	57	954	KEIK Eire Muni	40	0.6	-105	2.9	16	
40.05	-105.01	5	959	Erie Tower	40	3.0	-105	0.6	17	
40.9	-105	95	1,054		40	54.0	-105	0.0	18	
40.9	-105.18	15	1,069		40	54.0	-105	10.8	19	
40.33	-105.18	63	1,132	racetrack profil	40	19.8	-105	10.8	20	
40.33	-104	100	1,232	profile down	40	19.8	-103	60.0	21	
40.33	-105.18	100	1,332		40	19.8	-105	10.8	20	
40	-105.267	37	1,370		40	0.0	-105	16.0	22	
39.5	-105.183	56	1,426		39	30.0	-105	11.0	23	
39.5	-104.75	37	1,463		39	30.0	-104	45.0	24	
39.5701	-104.849	12	1,475	Centennial	39	34.2	-104	51.0	25	
39.9088	-105.117	44	1,519	Rocky Mtn Metr	39	54.5	-105	7.0	1	

<u> </u>	pntw	Ingw	latw	Ingw_min	Ingw_deg	latw_min	latw_deg	alt_way_point	altit_kft	time_altit
	1	-105.117	39.9088	7.0	-105	54.5	39	Rocky Mtn Metro		00:00:00
	2	-104.85	40.5	51.0	-104	30.0	40		15	00:11:07
1	3	-104.5	40.8	30.0	-104	48.0	40	calibration	15	00:18:15
								calibration	15	00:25:15
								spiral profile	7	00:33:15
r	4	-105.18	40.8	10.8	-105	48.0	40		7	00:42:24
									7	00:48:00
i	5	-105.011	40.4518	0.7	-105	27.1	40	KFNL Ft. Collins	5.26	00:49:00
									7	00:50:00
i	6	-104.9	40.33	54.0	-104	19.8	40		7	00:51:38
	7	-103.5	40.33	30.0	-103	19.8	40	racetrack profile	7	01:10:37
								racetrack profile	18	01:30:37
								profile down	7	01:40:37
i T	8	-103.5	40.1666	30.0	-103	10.0	40		7	01:43:32
,	9	-104.5	40.1666	30.0	-104	10.0	40		7	01:57:07
1	10	-104.5	38.5	30.0	-104	30.0	38		7	02:24:00
1									7	02:29:31
	11	-104.497	38.2891	29.8	-104	17.3	38	KPUB Pueblo	4.9	02:30:31
1									7	02:31:31
2	12	-104.33	38	19.8	-104	0.0	38	spiral profile up	7	02:36:10
1								spiral profile up		02:47:10
+								spiral down	7	02:58:10
, 	13	-104.7	38	42.0	-104	0.0	38		7	03:03:21
	14	-104.7	38.5	42.0	-104	30.0	38	racetrack profile		03:12:15
<u> </u>		-			-			racetrack profile		03:32:15
+								spiral down	7	03:43:15
;	15	-105	39.5	0.0	-105	30.0	39		7	04:01:31
+									7	04:09:37
	16	-105.048	40.0102	2.9	-105	0.6	40	KEIK Eire Munic		04:10:37
_	17	-105.01	40.05	0.6	-105	3.0	40	Erie Tower	7	04:11:29
		100.01	10.00	0.0	105	5.0	10	spiral up	15	04:19:29
								Spirur up	7	04:27:29
, 	18	-105	40.9	0.0	-105	54.0	40		7	04:42:37
	19	-105.18	40.9	10.8	-105	54.0	40		7	04:45:02
	20	-105.18	40.33	10.8	-105	19.8	40	racetrack profile		04:55:10
+		103.10	-0.55	10.0	.05	13.0		calibration	18	05:15:10
+	21	-104	40.33	60.0	-103	19.8	40	profile down	18	05:31:10
+			-0.55	00.0	105	13.0	+0	prome down	7	05:41:10
<u>, </u>	20	-105.18	40.33	10.8	-105	19.8	40		7	05:57:10
	20	-105.267	40.33	16.0	-105	0.0	40	Boulder	7	06:03:05
	22	-105.183	39.5	11.0	-105	30.0	39	Bouider	7	06:03:03
_	23	-103.183	39.5	45.0	-103	30.0	39		7	06:12:03
		-104.75	39.3	43.0	-104	50.0			7	06:17:58
<u>.</u>	25	-104.849	39.5701	51.0	-104	34.2	39	Centennial	4.8	06:18:53
-	25	-104.049	39.3701	51.0	-104	54.2	39	Centennial	4.8	
									7	06:20:53
		105 117	20.0000	7.0	105			De elso Mars Martin		06:25:55
<u> </u>	1	-105.117	39.9088	7.0	-105	54.5	39	Rocky Mtn Metro	5.6/3	06:26:55

Colorado Power Plants Sized/colored by 2005 NOx emissions

