This Week in Terminal **January 13, 2006**

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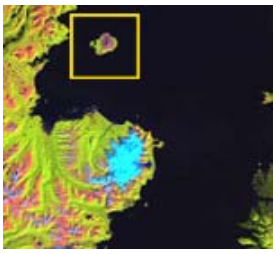
FAA Well Prepared for Augustine Eruption

(Source: ATO Online)

Jan. 12 – Two explosions occurred early Wednesday morning near the summit of Augustine Volcano in Alaska. Satellite data showed the volcano, found about 180 miles southwest of Anchorage, had emitted an ash cloud rising to 30,000 feet. The Alaska Volcano



Landsat 7 image showing Augustine Volcano

Observatory changed its color code from orange to red, but the area's aviation community took the eruption in stride as just another fact of life on the Last Frontier.

The National Weather Service issued two Significant Meteorological Advisories to warn pilots of the drifting ash cloud through the course of the day. By the end of the day, neither was in effect. An ash-fall advisory issued for Cook Inlet north of Augustine Island was canceled Thursday. Beyond having to direct aircraft away from a small flight restriction issued for the ash cloud, the FAA Air Route Traffic Control Center in Anchorage reported no significant impact on air traffic. A temporary flight restriction remains in effect for a five nautical mile radius of Augustine, from the surface to 50,000 feet.

"This was not a major eruption," a specialist at the Alaska Regional Operations Center reported. "There were two quick eruptions, and the second one did not have a lot of ash."

The ROC specialist said the plume from the volcano could be described as a "poor ash cloud." Its movement was largely to the north and northwest, away from Anchorage, moving toward the less-populated Katmai area of Alaska.

“It’s been fairly quiet this evening, after those two early eruptions,” she stated. Checking seismic activity data from the Alaska Volcano

Augustine Volcano - January 4, 2006

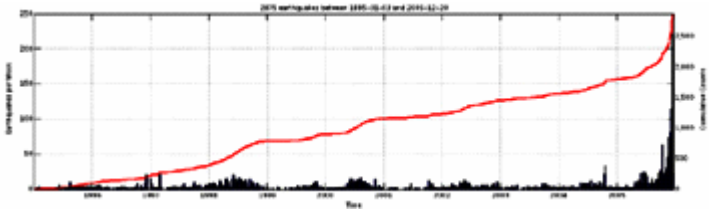
Observatory, she added that in the 24 hours since the second eruption there was almost no activity.

Calm reaction to potentially cataclysmic acts of nature is a widespread character trait among Alaskans -- where arctic weather, earthquakes, tsunamis and volcanoes are facts of life. Out of past adversity, new ways of preparing for natural disasters have evolved. It should be no surprise that Alaska is home to both the Tsunami Warning Center (which also measures the area's frequent earthquakes) and the Alaska Volcano Observatory.

The FAA maintains close communications with the AVO, which not only monitors volcanic activity, but also provides timely and accurate warnings. The FAA uses information received from the AVO to alert pilots and air traffic controllers so aircraft can be routed around volcanic ash clouds.

Volcanic eruptions can send ash far above the altitudes at which jet aircraft commonly operate, affecting hundreds of miles of airspace as the ash drifts with prevailing winds. Ash clouds are formed of tiny mineral particles, typically less than .5 mm in size, mixed with acid gasses or coated with acid droplets. The clouds are difficult to distinguish from water clouds when visible and are almost impossible to detect at night. They are not identifiable by standard airborne or air traffic radar.

Volcanic ash can sandblast windows and clog sensors on aircraft flying into them. The gas and fine particles may enter the cabin of pressurized aircraft, even through filtered ventilation systems. Radio communications can be adversely affected by the electrostatic properties of the cloud. Worse yet, ash clouds can rob an aircraft of some, or all, of its propulsion.



Earthquake activity within 8 km of Augustine

In 1989 the Redoubt Volcano, roughly 80 miles north of Augustine, began a series of eruptions in December that continued into early 1990. On Dec. 15, a KLM B747 flying from

Amsterdam to Anchorage flew into what appeared to be a thin layer of normal clouds. The aircraft's cockpit filled with brown dust that smelled of sulphur. All four engines on the aircraft died, and the cockpit windows were sandblasted opaque. The aircraft plummeted 14,000 feet before the pilots could restart the engines. The aircraft landed safely at Anchorage, but with damage totaling $80 million, including the replacement of all four engines.

Through the on-and-off eruptions of Redoubt, air traffic operations were constantly adjusted to keep aircraft well away from its shifting ash cloud. Operators of aircraft using Polar and North Pacific routes through the Anchorage area were forced to weigh the cost of waiting for a break in the ash cloud, or electing to fly less direct routes at greater expense. Given Alaska's remote location and its reliance on aviation, there was often little choice other than to wait.

Disruptions to air traffic because of Alaskan volcanic activity are no less likely today. However, FAA

Map of Augustine and surrounding volcanoes

is ready to act on warnings received from the AVO, which is well equipped to detect eruptions. AVO's instruments registered increased seismic activity at Augustine since spring 2005. It recorded up to two earthquakes a day there in early May, between three and four per day in October, and as many as 15 per day by mid-December.

Having that data speeds the issuance of temporary flight restrictions, helping to prevent pilots from flying into potentially deadly airspace. Modern satellite imagery provides almost immediate confirmation of an ash plume, and the National Weather Service provides ash movement forecasts when eruptions are occurring, which both air traffic control and aircraft operators use to avoid the dangerous plume.

Volcanic eruptions happen. It's Alaska, after all. Much like a midwinter cold snap, they don't last forever and sometimes they are not all that much trouble. But when a bad one comes along, the FAA is ready to handle it.

WTSA News:
(Source: Sherry Avery, Los Angeles Hub Manager)

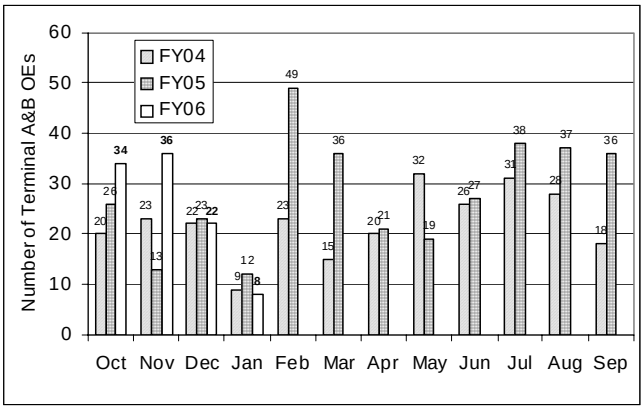
Santa Monica Tower has not had an operational error or deviation in over five years. This has entailed almost 700,000 operations and represents exceptional teamwork, professionalism, and a focus on customer service.

Operational Errors (OEs)

Safety of the operation is always our highest priority. Operational errors/operational deviations are one measure by which the safety of the operation is evaluated.

	Category A & B	All Categories	Ceiling FY06
Terminal OEs Reported 01/06-01/12	6	13	
Terminal OEs for January	8	17	
Terminal OEs for December	22	52	
Terminal OEs FY06 to Date	100	210	
Total Terminal Cat A/B OEs	100		338
Total System Cat A/B OEs	172		680

(As of 01/12/06)



(As of 01/12/06)

For this reporting period (01/06/06 – 01/12/06), there were 13 overall operational errors reported. There was 1 category A error and 5 category B errors relating to the following factors:

1. One category A at PNS due to lack of situational awareness while trying to correct a departure beacon code when another aircraft was converging.
2. One category B at BHM due to failure to recognize converging traffic

3. One category B at D01 due to lack of situational awareness vectoring to final approach
4. One category B at SCT due to lack of positive control with aircraft climbing and descending
5. One category B at GSO due to failure to recognize converging traffic
6. One category B at NCT due to failure to recognize converging traffic

ATO-T Quality Assurance
Operational Error Summary and Category A/B Metrics
10/1/2005 - 1/11/2006

TERMINAL OPERATIONAL ERRORS:

Service Unit	Total OEs	Category				
		A	B	C	D	UNCL
Central	71	1	27	14	14	15
Eastern	97	5	49	15	10	18
Western	42	2	16	6	5	13
Total	210	8	92	35	29	46

Time on Position

1-9 min	10-19 min	20-29 min	30-39 min	40-49 min	50-59 min	60 or more
29	27	23	26	21	24	57

Number of Aircraft in Sector

1 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	> 13
31	79	60	27	7	1	0

OEs with positions combined	65
OEs with OJT in progress	19
With previous errors	62

Terminal Cat A/B Operational Error Summary
as of
1/11/2006

Number of days into FY..... 102

Percent of FY elapsed..... 28%

	OE FY-06	OE FY-05	Change OE FY05 vs 06	FY06 % Change	FY06 Cat A/B Target	FY06 Cat A	FY06 Cat B	FY06 Cat A/B	FY06 Cat A/B YTD Pacing	FY06 A/B Variance
Central Terminal	71	46	25	54.3%	99	1	27	28	23	21.7%
Eastern Terminal	97	59	38	64.4%	135	5	49	54	31	74.2%
Western Terminal	42	45	-3	-6.7%	99	2	16	18	23	-21.7%
TOTAL	210	150	60	40.0%	333	8	92	100	76	31.6%

YTD Terminal OEs by Critical Point

41 OEs for Awareness not maintained	
Percent of total errors	19.52 %
1 OEs for Failure to issue control instruction	
Percent of total errors	0.48 %
9 OEs for Failure to see traffic	
Percent of total errors	4.29 %
5 OEs for Failure to separate overtaking traffic	
Percent of total errors	2.38 %
19 OEs for Inadequate judgement	
Percent of total errors	9.05 %
36 OEs for Inadequate radar vectors	
Percent of total errors	17.14 %
12 OEs for Incomplete coordination	
Percent of total errors	5.71 %
4 OEs for Issued control instruction to wrong A/C	
Percent of total errors	1.90 %
7 OEs for Issued different altitude than intended	
Percent of total errors	3.33 %
2 OEs for Issued wrong direction turn	
Percent of total errors	0.95 %
13 OEs for Lack of speed control	
Percent of total errors	6.19 %
10 OEs for Lacked positive control in climb/descent	
Percent of total errors	4.76 %
1 OEs for Misapplication of LOA	
Percent of total errors	0.48 %
28 OEs for Misapplication of procedure	
Percent of total errors	13.33 %
21 OEs for Readback/hearback	
Percent of total errors	10.00 %
1 OEs for Unrecognized converging routes	
Percent of total errors	0.48 %

Total YTD OEs 210

System-wide YTD OEs by Service Area

Central Enroute			
Category	A	1	
Category	B	31	
Category	C	10	
Category	D	15	
Category	UNCL	2	
Total OEs for	Central Enroute		59
Eastern Enroute			
Category	A	4	
Category	B	33	
Category	C	12	
Category	D	32	
Category	UNCL	6	
Total OEs for	Eastern Enroute		87
Western Enroute			
Category	B	3	
Category	C	6	
Category	D	6	
Category	UNCL	5	
Total OEs for	Western Enroute		20
Central Terminal			
Category	A	1	
Category	B	27	
Category	C	14	
Category	D	14	
Category	UNCL	15	
Total OEs for	Central Terminal		71
Eastern Terminal			
Category	A	5	
Category	B	49	
Category	C	15	
Category	D	10	
Category	UNCL	18	
Total OEs for	Eastern Terminal		97
Western Terminal			
Category	A	2	
Category	B	16	
Category	C	6	
Category	D	5	
Category	UNCL	13	
Total OEs for	Western Terminal		42

Total YTD OEs. 376

Terminal OEs by Time on Position between 1/1/2006 and 1/11/2006

Date	Facility	O/E #	Svc Area	Category	Time on Position	# aircraft working	Positions combined	OJT in progress	Critical Point
1/6/2006	PNS	1	Eastern Terminal	A	1	3	☐	☐	Awareness not maintained
1/8/2006	MIA	2	Eastern Terminal	UNCL	3	5	☑	☐	Awareness not maintained
1/3/2006	NCT	1	Western Terminal	A	4	3	☑	☐	Misapplication of procedure
1/7/2006	D01	1	Western Terminal	B	9	4	☐	☐	Misapplication of procedure
1/5/2006	MIA	1	Eastern Terminal	C	28	8	☐	☐	Inadequate judgement
1/9/2006	GSO	1	Eastern Terminal	B	30	5	☐	☑	Awareness not maintained
1/1/2006	D10	1	Central Terminal	B	35	5	☑	☐	Lack of speed control
1/5/2006	BHM	1	Eastern Terminal	B	43	7	☑	☐	Lacked positive control in climb/descent
1/2/2006	SAV	1	Eastern Terminal	UNCL	43	4	☐	☐	Awareness not maintained
1/5/2006	DTW	1	Central Terminal	C	50	5	☐	☐	Inadequate judgement
1/2/2006	D21	1	Central Terminal	D	55	4	☑	☐	Readback/hearback
1/3/2006	SCT	1	Western Terminal	B	57	5	☐	☐	Lacked positive control in climb/descent
1/5/2006	EWR	1	Eastern Terminal	UNCL	57	7	☑	☐	Awareness not maintained
1/3/2006	ORD	1	Central Terminal	C	58	6	☐	☐	Misapplication of procedure
1/8/2006	CRQ	1	Western Terminal	UNCL	61	10	☑	☐	Misapplication of procedure
1/9/2006	SCT	2	Western Terminal	UNCL	62	2	☐	☐	Issued different altitude than intended
1/10/2006	NCT	2	Western Terminal	B	65	7	☐	☑	Awareness not maintained

Total OEs 17