

09SAB04

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# ALPA-Int warns of sulphur dioxide hazard from volcanic eruptions

*ALPA International has issued the following Safety Alert*

### Background:

Most pilots are aware of the hazard represented by volcanic ash, but a recent eruption highlights an additional hazard that flight crews must be equally aware of and that may not be co-located with the ash cloud. On July 16, 2008, the Okmok Volcano southwest of Cold Bay, AK erupted sending volcanic ash and sulphur dioxide (SO<sub>2</sub>) gas into the atmosphere. Following the eruption, the ash and SO<sub>2</sub> drifted in different directions. The volcano remains seismically active and another eruption could occur with little or no warning. Crews transiting routes near any volcanic threat should exercise caution and get frequent updates on the status of the volcanic activity. Extended exposure to volcanic gases such as SO<sub>2</sub>, can cause serious, long term respiratory problems if inhaled at high enough concentrations.

### Recommendation:

Recognise that the hazard from volcanic eruption includes more than the ash cloud and its effect on engines. Learn to detect and to avoid the potential health hazards associated with volcanic gases. Indications that volcanic gases are present include an acrid odour similar to electrical smoke, burnt matches, or rotten eggs.

If you suspect the presence of volcanic gases, follow appropriate procedures for fumes in the aircraft. It has been noted that prolonged exposure to large concentrations of SO<sub>2</sub> without wearing

a mask will dull the sense of smell. Consequently, you might think that you are out of SO<sub>2</sub>, but in reality, still be in it. In addition to the health hazard, the presence of volcanic gases could be a precursor to a potential volcanic ash encounter. To reiterate, volcanic ash can make turbojet engines extremely susceptible to multiple malfunctions such as compressor stalls, increasing EGT, torching, and flameout. If the encounter is at night, St. Elmo's fire or other static discharges may be accompanied by a bright white glow in the engine inlets. Pilots inadvertently encountering an ash cloud should immediately reduce thrust to idle (altitude permitting), reverse course to escape from the cloud, and declare an emergency as appropriate. Do not attempt to fly through or climb out of the cloud.

Volcanic ash clouds and gases are not displayed on either airborne or ATC radar, and are extremely difficult to identify at night. Pilots must rely on reports from air traffic controllers and from other pilots to determine the location of an ash cloud or gases. If you are the first to discover an ash cloud or evidence of gases, immediately notify ATC and obtain clearance to reverse course and/or escape.



When Mt. Okmok in Cold Bay, Alaska erupted in July it sent clouds of ash and SO<sub>2</sub> drifting in a variety of directions



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