



## **Operations On Volcanic Ash Covered Airfields**

Boeing receives questions from airports and operators concerning flight operations at an airport that has received or expects to experience a volcanic ash fall. In the past, we have recommended that only under dire emergency conditions, such as ferrying the airplane out of the airport, that airplane operational areas (runways, taxiways, parking ramps, etc) must be thoroughly swept to remove accumulations of ash prior to the flight operation. We have also recommended, if possible, to spray water on the operational areas to help keep the remainder of the particles from blowing around. To the extent possible, airplanes should either be placed in hangars or flown out of the ash threat area to minimize their exposure.

Please note that Boeing has published articles in the Airliner Magazine (APR-JUN 1990 edition) and [AERO Magazine \(Vol 9\)](#) which provide general information regarding aircraft operation in the vicinity of volcanic ash. Although the Airliner Magazine article cites considerations for contaminated runway operations, additional knowledge gained since the article was published in 1990 indicates that it is not recommended to operate aircraft on runways contaminated with volcanic ash.

Two typical questions posed from operators are:

1. Does Boeing have any criteria related to acceptable depth of volcanic ash accumulated on the runway during landing and takeoff operations?

Answer: Boeing does not have any data regarding an acceptable depth of volcanic ash suitable for aircraft operations. It is recommended that no aircraft operations be conducted on runways contaminated with volcanic ash.

2. If the runway is contaminated with ash, it is expected that the runway will become slippery. Does Boeing have any performance or restrictions related to operation on runways that are contaminated with slippery ash?

Answer: Boeing does not have any data regarding performance restrictions or limitations regarding ground operation of the aircraft caused by the presence of volcanic ash. It is recommended that no aircraft operations be conducted on runways contaminated with volcanic ash. If an ash fall occurs suddenly during landing or taxi-in, and the crew cannot avoid operating in it, we recommend shutting down the engines, APU and packs as soon as possible. Thrust should be limited to sustain minimal taxi speed (keep thrust levels on ground as low as possible). Do not taxi with some engines shutdown so as to minimize thrust levels on any one engine. Runways and other ground maneuvering areas should be cleared of the volcanic ash prior to conducting aircraft operations.

### Conclusion

We recommend avoiding known volcanic ash conditions in-flight and on the ground. Aircraft should not be operated into or out of airports where there is falling ash and/or ash-covered runways/taxiways.