



International Civil Aviation Organization

**FIFTEENTH MEETING OF THE
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND
METEOROLOGY SUB-GROUP (CNS/MET SG/15) OF APANPIRG**

Bangkok, Thailand, 25 – 29 July 2011

Agenda Item 11: Implementation of SIGMET and warnings

COLLABORATIVE VOLCANIC ASH CONTINGENCY INITIATIVES

(Presented by the United States of America)

SUMMARY

This paper presents information on the U.S. Federal Aviation Administration (FAA) Air Traffic Control System Command Center (ATCSCC) collaborative initiatives for Volcanic Ash contingencies.

This paper relates to – **Strategic Objectives:**

A: **Safety** – Enhance global civil aviation safety

C: **Environmental Protection and Sustainable Development of Air Transport**

Global Plan Initiatives:

GPI-7 Dynamic and flexible ATS route management

GPI-9 Situational awareness

GPI-16 Decision support systems and alerting systems

GPI-19 Meteorological Systems

GPI-22 Communication infrastructure

1. Introduction

1.1 In April 2010, the impacts of the Eyjafjallajökull volcanic eruption and the subsequent drifting of Volcanic Ash (VA) in the atmosphere caused air transportation disruptions which had Europe and the rest of the world watching as Air Navigation Service Providers (ANSPs) sought to mitigate the safety impacts to aviation. Recently, in May of this year, another eruption in Iceland of Grímsvötn again drew the world's attention and, although ash emissions from Grímsvötn slowed after a few days, the ash plume was propelled above flight level (FL) 600 and this also caused air transportation disruptions in Europe. Unfortunately, the volcanoes in Iceland are a small part of the global collection of volcanoes (see attachment A).

1.2 Within the United States, a particular area of concern is along the Aleutian Islands and the Alaskan Peninsula. The density of active volcanoes in this area, lying as it does adjacent to the heavily-traveled North Pacific Air Traffic Routes, makes the ash threat especially acute. The generally westerly flow of winds in the region means that ash can be transported easily into airspace over the Canadian and U.S. Pacific Northwest regions. Ash from volcanoes on the Kamchatka Peninsula of Russia also poses a threat because it tends to drift into the heavily traveled North Pacific airways, which are within the U.S. Flight Information Region (FIR) (see attachment B)

2. Discussion

2.1 The FAA's model for dealing with volcanic ash events relies on operator avoidance. To facilitate this, much like a major weather event, we gather information to disseminate to the operators of aircraft from Volcanic Ash Advisory Centers (VAAC), Pilot Reports (PIREPs) - which provide direct observations that supplement VAAC reports, Notice To Airmen (NOTAMs), Significant Meteorological Information (SIGMETs), and Meteorological Aviation Reports (METARs). Since VA clouds are limited by FIR boundary, and to ensure the global aviation community also receives timely, consistent information about the ash cloud's position, altitude, projected trajectory and drift, ANSP collaboration on VA information sharing should also not be bound borders.

2.2 The FAA ATCSCC participates in numerous collaborative telephone conferences (telcons) with global ANSPs daily. These telcons are used to provide Air Traffic Flow Management (ATFM) system and weather information, coordinate ATFM initiatives, manage security needs, support humanitarian efforts and, in times of VA impacts, enhance cooperation and response to disasters.

2.3 The ATCSCC engages in three scheduled collaborative telcons a day with NavCanada and two telcons with Mexico to handle North American ATFM issues. Should VA impact air routes, ANSP coordination of avoidance routes and traffic management initiatives would be collaboratively agreed upon, and mutually implemented, resulting in harmonization and optimization of ATC services throughout North America. Additional telcons to provide VA mitigation and information exchange would be conducted as needed throughout the day to tactically implement strategies and initiatives to ensure seamless ATFM. As is currently done with significant weather, Air Traffic (AT) flows could be rerouted through adjacent ANSPs to provide a safer operation around VA clouds. Telcon information is shared with stakeholders via advisory messages and telcon participation.

2.4 The ATCSCC engages in separate, daily telcons with Eurocontrol, Brazil and Colombia to exchange ATFM information. These telcon processes allow for ANSP familiarity and engagement in additional collaborative telcons, as needed, to mitigate impacts such as VA impacts. One example of additional collaboration was telcons held with Eurocontrol in April 2010 which addressed the impacts of the Eyjafjallajökull volcanic eruption. Another example is the recent collaborative telcons in May of this year that dealt with the eruption of Grímsvötn in Iceland which also caused air transportation disruptions in Europe. In both cases, information was shared with stakeholders to provide a common situational awareness.

2.5 The ATCSCC and Russia State ATM have held monthly practice telcons to develop volcanic ash contingency procedures. Familiarity with each ANSP's processes and coordination procedures was obtained and a web-based conference program allowing electronically shared information and collaboration on VA mitigation initiatives has been established. Currently, State ATM and the ATCSCC are in negotiations to establish their first Letter of Agreement (LOA) to document ATFM procedures for collaboration on a variety of contingencies that may impact air traffic.

2.6 The ATCSCC and Civil Aviation Bureau, Japan (JCAB) Air Traffic Management Center (ATMC) conduct collaborative telcons three times a week to exchange ATFM information and response plans to disasters and subsequent impacts to air traffic. These telcons have increased ANSP familiarity and engagement in additional collaborative telcons, as needed. This type of telcon framework is the basis for enhanced collaboration on VA impacts. In March 2011, the ATMC/ATCSCC telcons enhanced ANSP responses to the impacts caused by the massive earthquake and resulting tsunami off Japan's Northern coast. Telcons enabled JCAB ATMC to pass real-time information to the ATCSCC on the major airports and routes that had been impacted from this event.

2.7 During the summer hurricane season, the ATCSCC engages in a series of hurricane telcons with ANSPs in the Caribbean and South America. The ATCSCC uses FAA owned telephone technologies to support ATFM collaboration with ANSPs with lesser technology and mitigation of hurricane impacts in this area. This same process is intended to support enhanced collaboration on VA impacts.

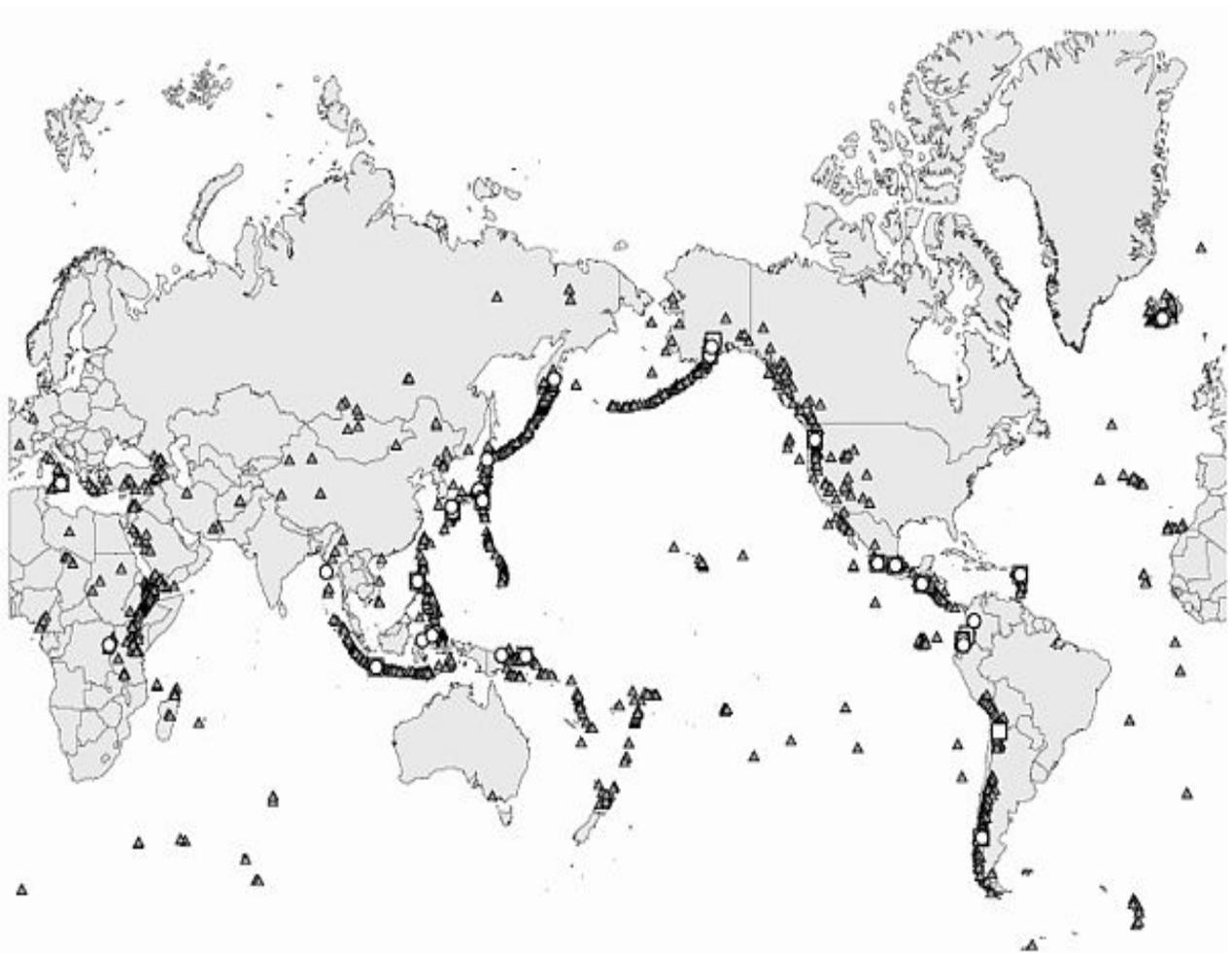
2.8 The FAA continues to develop collaborative relationships with ANSP colleagues around the globe. It is recognized that the FAA benefits from every ANSP collaboration. The familiarity and lessons learned from these relationships are invaluable, mutually beneficial, and a significant part of the collaborative network being established to progress VA contingency response and information sharing.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

Attachment A



Volcanoes of the world

Attachment B



In the North Pacific region, several explosive eruptions occur every year... Red triangles are potentially active volcanoes. The North Pacific Airways consists of five labeled fixed tracks and nine transition routes from Alaskan airspace to destinations in Asia.