



*International Civil Aviation Organization*

**SECOND MEETING OF THE ASIA/PACIFIC (APAC) VOLCANIC ASH EXERCISES STEERING GROUP (VOLCEX/SG/2)**

Bangkok, Thailand, 14 – 16 September 2015

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**Agenda Item 2: Review of VOLPHIN15/01**

**REPORT ON VOLPHIN 15/01**

(Presented by the Philippines)

**SUMMARY**

This paper presents information on the outcomes of the volcanic ash exercise held in Manila, Philippines on 11 August 2015.

**1. INTRODUCTION**

1.1 The First Meeting of the Asia/Pacific Volcanic Ash Exercises Steering Group (VOLCEX/SG/1) was held in Manila, Philippines from 27 – 29 May 2015. The meeting served as an inaugural planning meeting for volcanic ash exercises in the Asia/Pacific Region in 2015. The meeting's objective is to maintain safety, regularity and efficiency of aviation in the event of volcanic eruption.

1.2 During the meeting, the participants discussed plans for the first volcanic ash exercise in the Philippines. The meeting decided on having Taal (Number: 273070) as the exercise volcano.

1.3 The overall objective of the exercise is to maintain enhanced safety, regularity and efficiency of aviation in the event of a volcanic eruption by demonstrating the provision and exchange of volcanic ash information in support of flexible airspace management, improved situational awareness and collaborative decision making, and dynamically-optimized flight trajectory planning.

1.4 In particular, the exercise aims to demonstrate the practice of applicable global and regional procedures related to volcanic activity and volcanic ash, including:

- i. Distribution of alerts (e.g., VONA)
- ii. Distribution of AIS and MET message (e.g., VAA/VAG, SIGMET, NOTAM, AIREP)
- iii. Responses by air traffic control and air traffic flow and capacity management units and aircraft operators (e.g., safety risk assessments, tactical re-routes)
- iv. Enhanced situational awareness and CDM (e.g., via tele-conference/web-conference, website, or other media)

The exercise was conducted on 11 August 2015, over a period of approximately six (6) hours. The first VONA was issued at 0045 UTC and message announcing the cessation of the exercise at 0645 UTC by the Exercise Leader.

1.5 The exercise scenario involved the simulated eruption of Taal Volcano with volcanic ash cloud of up to FL370 and above moving north at 45 knots to impact ATS routes and airspace within Manila FIR.

1.6 The concentration of the exercise was on the flow of information among participating agencies.

## 2. DISCUSSION

### ATM Preparations

2.1 Manila ACC Team for VOLPHIN 15/01 exercise is composed of three ACC controllers. The team maintained close coordination with the Watch Supervisor for the copies of SIGMETs and NOTAMs received from the Flight Data Operators' position. Each member of the team was assigned with specific tasks. It was very clear to the team that the exercise should not affect the actual operations.

2.2 Emails were exchanged by the ACC directing staff with adjacent ACCs who will be affected by the exercise such as Hong Kong and Fukuoka ATMC. Aside from the meetings presided by the on-site leader, final voice coordination with airline operators and Manila WMO was likewise conducted to finalize some arrangements.

### Simulated ATFM Measures

2.3 VAA and VAAG provided by VAAC Tokyo which gave information on the affected airspace and its forecasts. It served as a guide for ACC to decide which portion of the airspace was available and could be used for re-routing of flights. Said airspace was defined in the exercise NOTAMs issued by ACC. Manila decided against closing each of the airways that was affected but instead defined the closed airspace and recommended the portion of the FIR which was available as alternate routes.

### Unexpected Loss of Internet Connection at NOF

2.4 The exercise was about to start when NOF reported losing their internet connection. It was unexpected. It somehow slowed down the first part of the exercise as significant amount of time was used for the processing of NOTAM.

2.5 The processing of NOTAM in the Philippines is not directly through its NOTAM Office. A NOTAM proposal or request is submitted to EAD using the International NOTAM Operations system of Manila AIS/NOF.

2.6 Log of events during the VOLPHIN 15/01 Exercise:

0003	Received dummy flight plan of PAL301X
0047	Copy of VONA was provided by AIS/NOF ACC controller applied simulated re-routing to all traffic traversing the vicinity of TAAL Volcano.
0054	Submitted AIPAF to AIS/NOF

0053	SIGMET 1 received from MWO Manila
0107	Received dummy flight plan of CEB111X
0150	Received dummy flight plan of PAL468X
0152	Received 1st Exercise NOTAM in AFTN
0155	Received dummy flight plans of PAL437X (RJGG-RPLL) SIA619X (RJBB-WSSS) from Fukuoka ATMC
0157	SIGMET 2 received in AFTN  ACC controller applied simulated re- routing to all traffic traversing the vicinity of TAAL Volcano.
0205	Submitted AIPAF to AIS/NOF
0209	Received request for re-routing of PAL301X
0213	Received 2nd Exercise NOTAM in AFTN
0235	Start of teleconference
0238	Received request for re-routing of PAL437X
0306	SIGMET 3 received in AFTN  ACC controller applied simulated re- routing to all traffic traversing the vicinity of TAAL Volcano.
0307	Received request for re-routing of SIA619X from ATMC.
0316	Submitted AIPAF to AIS/NOF
0321	Received 3rd Exercise NOTAM in AFTN
0330	Received cancellation of FPL of CEB111X, VHHH-RPLL
0330	Manila Approach relayed a query from JSA762 (RPLL-WSSS) to Manila ACC. JSA762 was inquiring on Taal Volcano activity.
0352	Received air report from QFA39 (Position N1400 E11900 0200z FL370 climbing FL390)
0439	Received air-report from QFA39 in AFTN
0449	Manila ACC received a call from Saudia Dispatch Manila inquiring about Taal Volcano activity and the alternate route available for their flight.
0501	Received air-report from PAL301

0541	Received request for re-routing of PAL468X
0551	Received reformatted AIREP from PAL301
0601	Received approval for re-routing of PAL468X from Fukuoka ATMC.
0606	SIGMET #4 received in AFTN ACC controller applied simulated re-routing to all traffic traversing the vicinity of TAAL Volcano.
0611	Submitted AIPAF to AIS/NOF
0616	Received Exercise 4th Exercise NOTAM in AFTN
0625	Start of final teleconference
0642	CSH Dispatch inquired about the volcanic activity
0650	VONA received via fax
0652	Submitted AIPAF to AIS/NOF
0655	SIGMET #5 received
0657	Received Final NOTAM (Exercise Termination/Cancellation) in AFTN

#### Post-Exercise Meeting

2.7 On 20 August 2015, the on-site exercise leader for Volphin 15/01 conducted a post-exercise meeting to evaluate the exercise and gather feedback from the participants. Based on the discussion lessons were identified and recommendations were drawn which could be useful to improve the conduct of the next exercise.

#### 2.8 Lessons Learned and Recommendations

##### **i. Lesson 1: Internet Limitations**

The internet speed was very slow. During the exercise the Management Information System (MIS) of CAAP provided Manila ACC with a good connection but unfortunately, no connection was provided with AIS and poor for other exercise participants.

Recommendation: Providing an internet connection dedicated for volcanic ash exercise participants, i.e. ACC, ATFM and NOF

##### **ii. Lesson 2: Contingency Procedures for AIS/NOF**

Few hours prior to the commencement of the exercise, it was reported that NOF lost internet connections. The contingency was to send NOTAM proposal to EAD through AFTN instead of sending it through INO but the procedure took a longer time.

Recommendation: The procedure of NOF during absence of internet connections should be enhanced. EAD should be informed using the fastest means such as telephone, as regards to the status of internet connection of NOF. Thereby, EAD will be immediately informed that NOTAM proposals or request will be received in the AFTN.

**iii. Lesson 3: VONA**

The trigger for the ACC to issue the first exercise NOTAM, for MWO to issue SIGMET and VAAC Tokyo to release VAA was the receipt of VONA. Except for Manila ACC, VAAC Tokyo and MWO received the VONA through email. NOF received it as well and provided a copy to ACC. It was noted that the contact details used by VO for ACC was not according to the listed details in the latest directives.

Recommendation: Encourage VO to actively take part in the planning and actual volcanic ash exercise.

**iv. Lesson 4: AIREPORT**

The exercise directives did not vividly describe how air-reports would be transmitted by the airline operators to ACC. Although, it was clear that the exercise should not have any effect on actual operations, ACC has prepared receiving the air-report through VHF radios.

When air-report was received by ACC, it was immediately transmitted to MWO and upon receipt of the Air Report Special (ARS) from ACC, an ARS (as per template) was sent to VAAC, WAFCS and RODBs. But as reported by VAAC during the online chat, their system does not receive all pilot reports.

Recommendation: The exercise directive should include information on how the airline operators are supposed to send the air-reports.

The report of VAAC on the capability of their system in receiving air-reports should likewise be addressed.

**v. Lesson 5: Alternate means of communication for coordination among participants**

The use of email for coordination between ATS Facilities and between ATS facilities and airlines was found to be slow.

Recommendation: It is suggested that the directives should include the use of other means of communication such telephone and/or fax.

**vi. Lesson 6: Inadequate Equipment to Support Electronic means of Coordination e.g., Laptop, printer**

The operations room of Manila ACC does not have internet or WIFI connection. For the purpose of carrying out the exercise, internet was provided. One laptop was connected to internet which was used for online chat/SMS Teleconference and a mobile device was used for sending and receiving emails. The two devices were found insufficient to act on the required tasks without too much delay.

VOLPHIN 15/01 sheet was received during the exercise. The ATFM unit provided ACC with a copy because the ACC laptop was not connected to a printer.

During the exercise WMO was also using only one laptop for email and online chat. MWO switched window display from skype meeting room to email. It was noticed that during the switching, the MWO is cut-off from the meeting room and going back, the MWO office lost the previous trail of messages and made the office not aware that there was a second briefing.

Recommendation: The exercise was heavy on the use of computers. ACC and MWO should have prepared 2 or 3 laptops and to connect one of them to a printer.

**vii. Lesson 7: Effect of Volcanic Ash Exercise to Real/actual traffic**

During the exercise, three (3) airlines inquired from the Watch Supervisor of Manila ACC on the status of Taal volcano. They were requesting for available reroutes for their flight. This event showed that some airlines were not well informed of the volcanic ash exercise taking place in Manila although a warning or preparatory NOTAM was issued by Manila on 04 August 2015.

Recommendation: To avoid unnecessary apprehensions to the airlines, a more effective way of informing them should be utilized. The airline association could be tapped to inform their members on the planned exercise.

**viii. Lesson 8: Teleconference**

A dry run teleconference was done few days before the exercise. The available internet at CAAP cannot support the teleconference.

The teleconference was originally planned to be done at specific time slots but during the actual exercise real-time reporting was done by each of the participants. Thus, during the scheduled teleconference which was used for report through online chat, some participants did not actually know what else to report.

Recommendation: The online chat proved helpful as advice on problems encountered can be reported immediately. However, the exercise directive should be very clear on how the teleconference and online chat should be conducted.

**ix. Lesson 9: VOLPHIN 15/01 Sheet**

The VOLPHIN 15/01 sheet was sent when the exercise has already started. Although it was a simple spreadsheet, the participants still took some time to figure out how it will be applied.

Recommendation: The VOLPHIN sheet should be distributed in advance, preferably together with the directives.

**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.

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