



International Civil Aviation Organization

**The First Meeting of the APANPIRG ATM Sub-Group
(ATM /SG/1)**

Bangkok, Thailand, 20 – 24 May 2013

Agenda Item 5: ATM Coordination (Meetings, Route Development, Contingency Planning)

Update on the VOLKAM/13 Volcanic Ash Exercise

(Presented by Japan and the United States)

SUMMARY

This paper presents information on the outcomes of the volcanic ash exercise held in Kamchatka, 15-16 January 2013 (VOLKAM/13).

Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

Global Plan Initiatives:

All GPIs

1. Introduction

1.1 The first meeting of the Volcanic Ash Exercises Steering Group for the (far) eastern part of the EUR Region (EUR (EAST) VOLCEX/SG/1) was held on 21-23 August 2012 in Petropavlovsk-Kamchatsky, the Russian Federation. The meeting was composed of various disciplines related to Meteorology (MET) (10 participants), volcano operations and research (7), Air Traffic Services (9), that included Area Control Centres (ACC) and Air Traffic Flow Management (ATFM), as well as one representative from International Air Transport Association (IATA), one expert from Eurocontrol and one representative from the International Civil Aviation Organization (ICAO).

1.2 The attendees gave presentations that provided the framework to exchange viewpoints on volcanic ash, issuing advisories, Significant Meteorological Advisory (SIGMET) and Notice to Airmen (NOTAM) and managing airspace in such events. The attendees discussed plans for the first volcanic ash exercise between the three States taking place 15-16 January 2013 in Kamchatka (VOLKAM/13).

1.3 The following aims and objectives were developed for the Exercise:

- Demonstrate information flow (VONA, VAA, SIGMET, NOTAM);
- Demonstrate coordination procedures between national ATM Centres (Air Traffic management Center (ATMC) Japan, Air Traffic Control System Command Center (ATCSCC), MATC Russian);

- Demonstrate coordination procedures between ACCs (ATMC Oceanic, Sapporo, Anchorage, Petropavlovsk-Kamchatsky, Magadan, Khabarovsk);
- Demonstrate coordination procedures between providers and airlines; and
- Consider adapting Air Traffic Management Volcanic Ash Contingency Plan (ATM VACP) template developed by the International Volcanic Ash Task Force (IVATF)
- *Noting no operational impact expected from test

1.4 The exercise utilized a northwest wind scenario to impact northern Pacific (NOPAC) routes to the southeast of Kamchatka during 2100 UTC 15 January to 0600 UTC 16 January 2013. The focus was on coordination procedures between national ATM Centers (Russian Federation – MATMC, Japan – Fukuoka ATMC, and the U.S. – ATCSCC) and ACCs (Anchorage, Petropavlovsk-Kamchatsky, Magadan, Khabarovsk, Sapporo and Fukuoka ATMC) and providers such as air traffic services (ATS) MET. There was no operational impact during the exercise.

2. Discussion

2.1 Below is the log that was kept for the exercise:

21:02	Karymsky Volcano went red
21:06	Tokyo VAAC issues VAA
21:11	Alaska Volcano Observatory (AVO) notified ZAN of the eruption
21:24	P/K ACC called ZAN and told them they closed 5 airways ZAN built Flow Evaluation Area (FEA) for Pacific Organized Track System (PACOTS) and NOPAC Contacted FAA ATCSCC and requested an advisory be issued and a telcon with airlines be set up. Western Service Area in Seattle was notified.
21:39	RJJJ called RJAA HF-radio and asked them to issue VA information.
22:18	United Airlines called with reroutes into Russian airspace off NOPAC and PACOTS routes. This was coordinated with Russia via email.
23:00	UPS gave a PIREP...
23:30	telcon. KVERT advised that ashcloud was at 10,000 meters. when that was reduced, it was not broadcast or adjusted in products
03:07	ZAN CWSU issued a Mission Impact Statement (MIS) for volcanic ash
03:26	ZAN CWSU issued a Center Weather Advisory (CWA) for volcanic ash
04:21	New Eastbound PACOTS published.
05:23	ZAN CWSU extended the CWA
05:30	telecon,
06:00	Exercise ended

2.2 Anchorage noted that 20 airlines and 61 aircraft were affected during the exercise; 26 of which were eastbound and 35 westbound.

2.3 Overall, the exercise was considered successful. There was strong support and collaboration between the FAA Anchorage and Command Center, the JCAB and the State ATM Corporation.

2.4 A debrief meeting was held 19-20 February 2013 at the ICAO Paris Office. The ICAO Paris office noted that this was the first volcanic ash exercise in Kamchatka under the auspices of ICAO

that involved the three States: Russian Federation, Japan and the United States. The exercise resulted in establishing inter- and intra-state coordination that could be used in real events in the future, as well as being the basis for future exercises.

2.5 Based on findings and feedback from the participants of the exercise, the group developed lessons learned for the next exercise scheduled for January 2014. Below are lessons of interest to the JCAB and FAA. A full listing of the lessons and actions can be found in the Summary of Discussions from the 19-20 February meeting in Attachment A.

- Lesson 1: Lack of direct communication between Fukuoka and PK Flight Information Regions FIRs (FIRs) which resulted in alternate reroute proposal to utilize Khabarovsk and Sapporo ACC's Letter of Agreement (LOA).
 - Recommendation 1: Consider developing LOA for contingency situations to include adjacent FIRs and/or ACCs.
- Lesson 2: Consider **alternate communications amongst ACCs and ATM Centers** since correspondence via email was identified as slow for ATM measures and did not work between Fukuoka ATMC and Oakland Center.
 - Recommendation 2: Consider enhancing procedures for communications (using various methods) in a real event considering the various participants (ATM Centers, ACCs, etc..) and consider including in contingency plan being developed by CPWG considering the ATM VACP template
- Lesson 3: Not clear on procedures involving **reroutes** and **associated ACC handover** coordination whether they are tactical (en-route) or pre-flight.
 - Recommendation 3: Clarify procedures between ATS Providers and operators to address reroutes and associated ACC handover coordination whether they are tactical (en-route) or pre-flight and publish them in national AIPs and reference in contingency plan
- Lesson 4: **VAG** of 18 hours not sufficient in formulating (**PACOTS**) since the route is effective 24 hours after issuance. The same is true for west bound tracks provided by Oakland ACC which are effective to 30 hours.
 - Recommendation 4: Communicate to user the confidence in PACOTS and west bound tracks decreases considerably after 18 hours due to the absence of proper guidance (VAG only valid to 18 hours in accordance to Annex 3)
 - Recommendation 4: Monitor the International Airways Volcano Watch Operations Group (IAVWOPSG) on developments related to VAG, particularly to the extent of forecast

Note that WP/31 of IAVWOPSG/7 recognizes Recommendation 4/17 of IVATF that includes “*assess the feasibility of providing volcanic ash advisories (VAA), including graphics (VAG), beyond the current T+18 hour requirement*”
- Lesson 8: **Teleconferences** proved useful, however they should be improved (background noise, style should be as clear and concise as possible) and considered for real-time events taking into account collaborative decision making (CDM), to allow for interaction between operators and ANSPs on reroutes published via NOTAM
 - Recommendation 8: Formalize teleconferences for real-time events taking into consideration CDM to address matters such as published reroutes via NOTAMs and

operator's needs. The CDM process is intended to develop a consensus amongst ANSPs and operators noting that operators utilize the safety risk assessment approach. Procedures on arranging teleconferences and their attributes (lead considering where the volcano erupts, participants, their roles, use of web portal for information sharing, language, directive to mute microphones unless otherwise asked) should be provided in the contingency plan and considered by CPWG.

2.6 The meeting attendees also developed a list of action items to be updated in preparation for a planning meeting in August 2013. It was agreed that some actions between the FAA and State ATM Corporation and actions between the JCAB and State ATM Corporation would be discussed bilaterally during the CPWG meeting scheduled 13-17 May 2013.

3. Conclusion

3.1 The meeting is invited to note the information provided.

SUMMARY OF DISCUSSIONS OF THE VOLKAM13 DEBRIEF & EUR (EAST) VOLCEX/SG/2 MEETINGS

(Paris, 19-20 February 2013)

1. Introduction

1.1 The debrief meeting for the volcanic ash exercise in Kamchatka in 2013 called VOLKAM13 was held in Paris, France on 19 February 2013.

1.2 The **VOLKAM13 debrief meeting** was chaired by the Exercise Leader, Alexey Buevich, head of ATFM and Strategic Planning Main ATM Center (MATMC) of Russia. The Secretary of the meeting was Mr. Christopher Keohan of the ICAO EUR/NAT Office, Paris.

1.3 In the opening address, the Secretariat commended participants of VOLKAM13 noting this was the first volcanic ash exercise in Kamchatka under the guise of ICAO that involved the three States: Russian Federation, Japan and the United States. Inter- and intra-State coordination could be used in real events in the future as well as being the basis for future exercises. The Secretariat noted that the objective of the debrief meeting was note the successes and at least as important note the lessons learned and develop recommendations for future consideration. Associated actions were also developed with assignments and dates.

1.4 The meeting was attended by 14 experts representing 3 States and 3 International Organizations (Eurocontrol, IATA, and ICAO). The list of participants and contact list are presented at **Appendix A** and **Appendix B** respectively. The group adopted the Provisional Agenda as presented at **Appendix C**.

2. Brief account of VOLKAM13 aims and objectives

2.1 The group recalled the aims and objectives and based on input provided by participating agencies (Volcano Observatories (VO), Volcanic Ash Advisory Centres (VAAC), Meteorological Watch Offices (MWO), international NOTAM offices (NOF), Area Control Centres (ACC), National Air Traffic Management Centres (ATMC), Civil Aviation Authorities (CAA) and airlines) significant comments and main themes were mapped to the aims and objectives as reproduced below.

- Demonstrate information flow (Volcano Observatory Notice for Aviation - VONA (noting coordination among volcanological observatories), Volcanic Ash Advisory - VAA, SIGMET, NOTAM) and coordination procedures between VO, MWO, corresponding ACC and VAAC
 - *Achieved with some caveats. Information was sent from VO (issued VONA, but not on KVERT website) -> VAAC (issued VAA and volcanic ash graphic (VAG) via AFTN as per Annex 3, 3.5.1c and ICAO Doc 9766, but VAA/VAG not uploaded to VAAC Tokyo website – preferred location for airlines) -> MWO (Yelizovo (PK) MWO issued SIGMET, but SIGMET could have been more timely and include the test code) -> ACC*

Note that Petropavlovsk-Kamchatsky is sometimes referred to as PK in this report

Note that KVERT in the Russian Federation, on behalf of the Institute of Volcanology and Seismology (IVS) FED RAS, is responsible for providing information on volcanic activity to international air navigation services for the airspace users.

- Demonstrate coordination procedures between national ATM Centres (MATMC, Fukuoka ATMC, US ATC System Command Center)
 - *Achieved as per info on telecom (e.g. reroutes in Fukuoka Flight Information Region (FIR) assisted with new PACOTS (Pacific Organized Track System) for E bound flights noting uncertainty in PACOTS past 18 hours due to the extent of VAG forecasts. MATMC allowed reroutes into Russian airspace – particularly for W bound flights noting improvements could be made if PK ACC and Oceanic Sector of Fukuoka ATMC had a LOA and direct communications)*
- Demonstrate coordination procedures between ACCs (Anchorage, Fukuoka ATMC, Khabarovsk, Magadan, Oakland Center, Petropavlovsk-Kamchatsky, Sapporo)
 - *Achieved as per info on telecon (e.g. Anchorage, Fukuoka and Petropavlovsk-Kamchatsky detailed the impact to their airspace), but communications during a real event needs to be clarified.*
- Demonstrate coordination procedures between providers and airlines
 - *Achieved with caveats – more details provided in lessons learned, but in short improvements to VONA, VAA/VAG, NOTAM, SIGMET can be achieved that would assist in the stakeholders decision making*
- Based on exercise conclusions, consider adapting Air Traffic Management Volcanic Ash Contingency Plan (ATM VACP) template developed by the International Volcanic Ash Task Force (IVATF) for use in the region
 - *Could consider instructions on participating in teleconferences (what each discipline should or could say) and could include examples of SIGMET and NOTAM*
 - *Could consider including or making link to reroute procedures (which need clarification) between ATS Providers and operators based on bilateral and multi-lateral developments*

Noting no operational impact expected from test (e.g. dedicated staff for test)

3. Lessons learned and recommendations

3.1 More detailed lessons learned and recommendations were formulated which may be considered in future real events as well as future exercises.

- Lesson 1: **Lack of direct communication between Fukuoka and Petropavlovsk-Kamchatsky FIRs** resulted in alternate reroute proposal that utilized Khabarovsk and Sapporo ACCs since they have a Letter of Agreement (LOA) and direct communications. Note that the reroute of Cathay Pacific flight from Hong Kong China to New York would have been 140 nm longer, which would have contributed to a required fuel stop.
 - Recommendation 1: Consider the development of LOA (especially for contingency situations) between Oceanic Sector of Fukuoka ATMC and Petropavlovsk-Kamchatsky ACC; other adjacent FIRs and/or ACCs who already have LOAs need to include contingency reroutes and consider the need to establish transitions from

NOPAC to Russian Trans-east Routes and vice-versa in this area or an alternative contingency coordination for specific cases. To be considered in bilateral meeting between Japan and Russian Federation to be forwarded to the Cross Polar Working Group (CPWG).

- Lesson 2: Consider **alternate communications amongst ACCs and ATM Centers** since correspondence via email was identified as slow for ATM measures and did not work between Fukuoka ATMC and Oakland Center.
 - Recommendation 2: Consider enhancing procedures for communications (using various methods) in a real event considering the various participants (ATM Centers, ACCs, etc...) and consider including in contingency plan being developed by CPWG considering the ATM VACP template
 - Lesson 3: Not clear on procedures involving **reroutes** and **associated ACC handover** coordination whether they are tactical (en-route) or pre-flight.
 - Recommendation 3: Clarify procedures between ATS Providers and operators to address reroutes and associated ACC handover coordination whether they are tactical (en-route) or pre-flight and publish them in national AIPs and reference in contingency plan
 - Lesson 4: **VAG** of 18 hours not sufficient in formulating **PACOTS** since the route is effective 24 hours after issuance. The same is true for west bound tracks provided by Oakland ACC which are effective to 30 hours.
 - Recommendation 4: Communicate to user the confidence in PACOTS and west bound tracks decreases considerably after 18 hours due to the absence of proper guidance (VAG only valid to 18 hours in accordance to Annex 3)
 - Recommendation 4: Monitor the International Airways Volcano Watch Operations Group (IAVWOPSG) on developments related to VAG, particularly to the extent of forecast

Note that WP/31 of IAVWOPSG/7 recognizes Recommendation 4/17 of IVATF that includes “*assess the feasibility of providing volcanic ash advisories (VAA), including graphics (VAG), beyond the current T+18 hour requirement*”
 - Lesson 5: Not clear how to use **Danger Areas** and if used, who and how is it determined
 - Recommendation 5: States consider the use of Danger Area in the context of IVATF Recommendation 4/16 (*That States should not declare a danger or restricted area in respect of volcanic ash, except over and in proximity to an erupting volcano*). Note that this is aligned with section 1.2 of the ATM VACP template.
 - Consider most appropriate term (Danger Area, Restrictive Area, Prohibitive Area) for this sub region (northwest Pacific that includes ICAO Regions EUR, APAC and NAM) and adapt the ATM VACP template, if necessary
 - Lesson 6: Determine who should issue **NOTAMs for Petropavlovsk-Kamchatsky FIR**. Anchorage ARTCC to request NOTAM for Petropavlovsk-Kamchatsky FIR when eruption occurs (for colour codes orange and red) as per LOA*, but this agreement could be reconsidered as PK may be able to request NOTAM from NOF Moscow
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- Recommendation 6: Reconsider the NOTAM LOA that exists between PK ACC and Anchorage ARTCC to determine if there is a need to publish NOTAMs on volcanic ash for PK FIR by Anchorage and forward to CPWG

**Letter of Agreement (LOA) between PK ACC and Anchorage ARTCC concerning volcano information state PK ACC will immediately notify Anchorage ARTCC of any observed or reported volcanic activity, and then Anchorage ARTCC is tasked with issuing a NOTAM advising of significant volcanic activity.*

- Lesson 7: **Timeliness of NOTAM** unsatisfactory in Russian Federation and likely due to the time it takes to translate. For example, when the time elapsed approaches 30 minutes, the volcanic ash cloud advances 55 km for the given speed of the volcanic ash cloud in this test event of 110 km/hr.

- Recommendation 7: Russian AIS to consider expediting publication of NOTAMs specifically for volcanic ash

- Lesson 8: **Teleconferences** proved useful, however, should be improved (background noise, style should be as clear and concise as possible) and considered for realtime events taking into account collaborative decision making (CDM) to allow for interaction between operators and ANSPs on reroutes published via NOTAM

- Recommendation 8: Formalize teleconferences for realtime events taking into consideration CDM to address matters such as published reroutes via NOTAMs and operator's needs. The CDM process is intended to develop a consensus amongst ANSPs and operators noting that operators utilize the safety risk assessment approach. Procedures on arranging teleconferences and their attributes (lead considering where the volcano erupts, participants, their roles, use of web portal for information sharing, language, directive to mute microphones unless otherwise asked) should be provided in the contingency plan and considered by CPWG.

- Lesson 9: Exercise Directive should include **VAAC handover** from VAAC Tokyo to VAAC Anchorage to mimic real situations and test coordination (including sharing of information such as volcanic ash reports)

- Recommendation 9: Exercise Directive include VAAC handover from VAAC Tokyo to VAAC Anchorage to test coordination (including sharing of information such as volcanic ash reports) taking into consideration handover procedures from IAVWOPSG

- Lesson 10: VAAs/VAGs sent to SADIS/ISCS, however, **VAA/VAG availability** on VAAC Tokyo website preferred by the participants (United Airlines uses VAA/VAG in flight planning with assistance from their own MET in determining how conservative the forecast is), noting the second VAG was sent to the participants by email to accommodate this need

- Recommendation 10: Test VAA/VAG to be available on website or link as specified in the Exercise Directive (noting this is not an issue with realtime events) with message indicating that the web site be used for back-up purposes (noting users should obtain the information via SADIS/ISCS)

- Lesson 11: Difficult to determine if the **status and description of eruption** – e.g. VONA not compliant with the VONA template; VAA did not contain colour code noting it is optional in Table A2-1 of Annex 3. Also, height discrepancy of the volcanic ash cloud reported between KVERT (10 km), MWO (FL410) and UPS special air-report on volcanic ash (FL310) was not resolved in the telecon.

(note that a second VONA was not issued, but determined to be in compliance with ICAO Doc 9766 which states *VONA is issued by a VO when a colour code changes or within a colour-code level when an ash-producing event or other significant change in volcanic behaviour occurs*)

- Recommendation 11: Clarify the status and description of eruption and if changes occur and make the information easily available
 - Monitor means of issuance of VONA in guidance material (ICAO Doc 9766) expected by November 2013 to support the introduction of VONA in Amendment 76 to Annex 3 (Note 2 of 4.1). Also, indicate duration of event and if additional ash is expected.
 - VONA should comply with VONA template and consider future changes provided by the World Organization of Volcano Observatories (WOVO)
 - Consider posting test VONA on website
 - Clarify how differences of volcanic ash height observed and reported would be handled by VAAC Tokyo (e.g. maximum height used) as well as reporting in terms of FL for consistency. Include in Exercise Directive and contingency plan.
 - monitor results of IAVWOPSG (tasked to WOVO) with reference to including colour code in VAA
 - consider using estimated modelled data products and inform participants (clarification needed)
- Lesson 12: **SIGMET** on volcanic ash issued by Yelizovo (PK) MWO did not include the forecast position at the end period of validity of SIGMET and the timelines and test code (9999) sometimes not observed
 - Recommendation 12: Clarify in next exercise when to include volcanic ash forecast in SIGMET and provide templates on SIGMET well in advance. Yelizovo (PK) MWO should also utilize the test code and provide SIGMET in a timely manner.
- Lesson 13: Include more **special air-reports on volcanic ash** in next Exercise considering standard communications (proper WMO header and communication flow: aircraft-ACC-MWO-VAAC)
 - Recommendation 13: Include active participation by airlines in providing special air-reports on volcanic ash in the next Exercise Directive using routing in accordance to Annex 3 (aircraft-ACC-MWO-VAAC)
- Lesson 14: **Exercise timeline** not practical between second and third issuance of VAA/VAG resulting in a considerably long lull time noting that in some facilities there was a shift change
 - Recommendation 14: consider compressing the time between the second and third issuance of VAA/VAG in the Exercise Directive (for test purposes only)

4. EUR (EAST) VOLCEX/SG/2

4.1 The Volcanic Ash Exercises Steering Group for the (far) Eastern Part of the EUR Region (**EUR (EAST) VOLCEX/SG/2**) was held in Paris, France on 20 February 2013 to mainly

address recommendations provided by the VOLKAM13 debrief meeting, develop a future work programme and review Terms of Reference of the group. The group adopted the provisional agenda as provided in **Appendix D**.

4.2 The participants of the EUR (EAST) VOLCEX/SG/2 meeting were the same as the VOLKAM13 debrief meeting except for the participants from individual airlines as per the Terms of Reference. The EUR (EAST) VOLCEX/SG/2 meeting elected a chairperson, Alexey Buevich, head of ATFM and Strategic Planning Main ATM Center of Russia. The Secretary of the meeting was Mr. Christopher Keohan of the ICAO EUR/NAT Office, Paris.

5. Actions Agreed

5.1 To assure that the recommendations were dealt with, the EUR (EAST) VOLCEX/SG/2 meeting agreed to develop a table of actions and assignments as well as time goals based on recommendations above. The table of actions agreed is provided in **Appendix E**.

5.2 A telecon to determine the status of the actions above was expected during April 2013.

6. Cross regional cooperation

6.1 Cross-regional cooperation was discussed since the above action items had a large dependency on the Cross Polar Working Group, which is not an ICAO body. Therefore, the developments from that group could be considered at an inter-regional meeting such as the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS). More information on inter-regional meetings, particularly between EUR and APAC Regions was expected by May 2013. Adaptation to the ATM VACP template would need approval by the respective planning and implementation regional groups (PIRGs).

7. Future work programme of EUR (EAST) VOLCEX/SG

7.1 The future work plan was developed for the period from 2013 until 2015 as provided in **Appendix F**. For the next 12 months, the focus will remain on an eruption of a volcano in Kamchatka or Northern Kurile Islands in 2014. The Exercise date will be discussed at the planning meeting in order to consider seasonal air traffic pattern changes as result of the upper-wind pattern changes. The date selected should consider other exercises (one is conducted in spring in western EUR and NAT each year) since some participants would participate in both and may not have the resources to participate in both exercises if they occur near the same time. The details of VOLKAM14 will be determined at the planning meeting that would likely take place in the far eastern part of the Russian Federation in August 2014.

8. Terms of reference of EUR (EAST) VOLCEX/SG

8.1 The terms of reference of the EUR (EAST) VOLCEX/SG was reviewed and the group agreed to update the routes being tested to reflect likely scenarios (such as NOPAC, which is downwind of the volcanos most of the time). In addition, providing a definition of 'regional' when referencing a regional contingency plan was desired (e.g. northwest Pacific that involves 3 ICAO Regions – EUR, APAC and NAM). Furthermore, the group chose a different way to express the composition of the group. All these proposed changes to the Terms of Reference as provided in **Appendix G** would need to be reviewed and approved by the EANPG COG (July 2013).

9. Any other business

9.1 The VOLKAM13 debrief meeting closed at approximately 1700 hours on 19 November 2013 and the EUR (EAST) VOLCEX/SG/2 meeting closed at approximately 1230 hours on 20 November 2013.

Appendix A

VOLKAM/13 Debrief

19 February 2013

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Appendix C

DEBRIEF MEETING OF VOLKAM13

19 February 2013

ICAO EUR/NAT Regional Office, Paris

Provisional Agenda

19 February 2013		
Time	Item	Lead
0900-0930	<i>Registration</i>	--
0930	Welcome and opening of the meeting , including: <ul style="list-style-type: none"> • Purpose and conduct of the Debrief Meeting; and • Adoption of the provisional agenda. 	Secretary
1000	Recapitulation of VOLKAM13 , including: <ul style="list-style-type: none"> • Aims and Objectives • Participating agencies MWOs, ATCs, National ATM Centres, VAAC, NOTAM offices, CAAs, airlines 	Exercise Leader based on the Initial Exercise Reports submitted by DISTAFF
1030	<i>Coffee break</i>	--
1045	Recapitulation of VOLKAM13 (continued) <ul style="list-style-type: none"> • Participating agencies MWOs, ATCs, National ATM Centres, VAAC, NOTAM offices, CAAs, airlines 	Exercise Leader based on the Initial Exercise Reports submitted by DISTAFF
1200	<i>Lunch</i>	--
1330	VOLKAM13 lessons learned and recommendations: <ul style="list-style-type: none"> • Review collated list of lessons learned and recommendations 	Exercise Leader based on the Initial Exercise Reports submitted by DISTAFF
1515	<i>Coffee Break</i>	--
1545	Key messages arising from VOLKAM13: Taking into consideration the aims and objectives of VOLKAM13, and based on the lessons learned and recommendations discussed, the meeting will identify those key messages and possible actions of interest to the appropriate ICAO body, particularly in the context of the ATM Volcanic Ash Contingency Plan template Any other business	Exercise Leader Secretariat

Distribution: EUR (EAST) VOLCEX/SG members (Japan, Russian Federation, United States of America, IATA)

Copy to: France (care of VAAC Toulouse), Iceland, Eurocontrol, ICAO APAC Regional Office, Bangkok, ICAO NACC Regional Office, Mexico City

INTERNATIONAL CIVIL
AVIATION ORGANIZATION
European and North Atlantic Office

ORGANIZACIÓN DE AVIACIÓN
CIVIL INTERNACIONAL
Oficina Europa y Atlántico Norte



ORGANISATION DE L'AVIATION
CIVILE INTERNATIONALE
Bureau Europe et Atlantique Nord

МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ
ГРАЖДАНСКОЙ АВИАЦИИ
Европейское/Североатлантическое бюро

Appendix D

EUR (EAST) VOLCEX/SG/2

20 February 2013

ICAO EUR/NAT Regional Office, Paris

Provisional Agenda

20 February 2013		
Time	Item	Lead
0900	<i>Registration</i>	--
0930	Welcome and opening of the meeting , including: <ul style="list-style-type: none"> • Adoption of the provisional agenda • Election of chairperson 	Secretary
1000	VOLKAM13 lessons learned and recommendations , including: <ul style="list-style-type: none"> • Review • Develop action plan, if warranted 	Chair
1030	<i>Coffee break</i>	--
1045	Cross-regional cooperation , including: <ul style="list-style-type: none"> • How to create common plan for NOPAC area (far eastern EUR Region; northeast APAC Region; northwest NAM Region) under international framework 	Chair/Secretary
1200	<i>Lunch</i>	--
1330	Future work programme , including <ul style="list-style-type: none"> • A sketch of dates of future exercises • A sketch of host meeting locations 	Chair/Secretary
1515	<i>Coffee break</i>	--
1545	Review TORs Any other business	Secretary

Distribution: EUR (EAST) VOLCEX/SG members (Japan, Russian Federation, United States of America, IATA)

Copy to: France (care of VAAC Toulouse), Iceland, Eurocontrol, ICAO APAC Regional Office, Bangkok, ICAO NACC Regional Office, Mexico City

Appendix E – actions agreed – outcomes from VOLKAM13

Task	assigned	time
1. Consider the development of LOA (especially for contingency situations) between Oceanic Sector of Fukuoka ATMC and Petropavlovsk-Kamchatsky ACC ; other adjacent FIRs and/or ACCs who already have LOAs need to include contingency reroutes and consider the need to establish transitions from NOPAC to Russian Trans-east Routes and vice-versa in this area or an alternative contingency coordination for specific cases. To be considered in bilateral meeting between Japan and Russian Federation to be forwarded to Cross Polar Working Group (CPWG)	Russian Federation, Japan, US	May 2013 (WP for CPWG meeting and/or consider ICAO inter-regional coordination group as well)
2. Consider enhancing procedures for communications (using various methods) in a real event considering the various participants (ATM Centers, ACCs, etc...) and consider including in contingency plan being developed by CPWG considering the ATM VACP template	Russian Federation, Japan, US	May 2013 (CPWG and/or consider ICAO inter-regional coordination group as well)
3. Clarify procedures between ATS Providers and operators to address reroutes and associated ACC handover coordination whether they are tactical (en-route) or pre-flight and publish them in national AIPs and reference in contingency plan	Russian Federation, US	May 2013 (CPWG)
4. Communicate to use the confidence in PACOTS and west bound tracks decreases considerably after 18 hours due to the absence of proper guidance (VAG only valid to 18 hours in accordance to Annex 3)	Japan and United States	March 2013 (IAVWOPSG/7)
Monitor IAVWOPSG on developments related to VAG, particularly to the extent of	VAAC Tokyo/Anchorage	report to next SG meeting

<p>forecast</p> <p>Note that WP/31 of IAVWOPSG/7 recognizes Recommendation 4/17 of IVATF that includes “<i>assess the feasibility of providing volcanic ash advisories (VAA), including graphics (VAG), beyond the current T+18 hour requirement</i>”</p>		
<p>5. States consider the use of Danger Area in the context of IVATF Recommendation 4/16 (<i>That States should not declare a danger or restricted area in respect of volcanic ash, except over and in proximity to an erupting volcano</i>). Note that this is aligned with section 1.2 of the ATM VACP template</p> <p>Consider most appropriate term (Danger Area, Restrictive Area, Prohibitive Area) for this subregion (northwest Pacific that includes ICAO Regions EUR, APAC and NAM) and adapt the ATM VACP template, if necessary</p>	<p>Japan, Russian Federation, US</p>	<p>ongoing</p>
<p>6. Reconsider the NOTAM LOA that exists between PK ACC and Anchorage ARTCC to determine if there is a need to publish NOTAMs on volcanic ash for PK FIR by Anchorage and forward to CPWG</p> <p><i>*Letter of Agreement (LOA) between PK ACC and Anchorage ARTCC concerning volcano information state PK ACC will immediately notify Anchorage ARTCC of any observed or reported volcanic activity, and then Anchorage ARTCC is tasked with issuing a NOTAM advising of significant volcanic activity.</i></p>	<p>Russian Federation and United States</p>	<p>May 2013</p>
<p>7. Russian AIS to consider expediting publication of NOTAMs specifically for volcanic ash</p>	<p>Russian AIS</p>	<p>TBD</p>
<p>8. Formalize teleconferences for realtime events taking into consideration collaborative decision making (CDM) to address matters such as published reroutes via NOTAMs and operator’s needs. The CDM process is</p>	<p>Russian Federation, Japan, United States with assistance from Eurocontrol</p>	<p>May 2013</p>

<p>intended to develop a consensus amongst ANSPs and operators noting that operators utilize the safety risk assessment approach. Procedures on arranging teleconferences and their attributes (lead considering where the volcano erupts, participants, their roles, use of web portal for information sharing, language, directive to mute microphones unless otherwise asked) should be provided in the contingency plan and considered by CPWG.</p>	<p>ICAO (for inclusion in draft ATM VACP)</p>	<p>June 2013</p>
<p>9. Exercise Directive include VAAC handover from VAAC Tokyo to VAAC Anchorage to test coordination (including sharing of information such as volcanic ash reports) taking into consideration handover procedures from IAVWOPSG</p>	<p>Japan, United States, Exercise Leader</p>	<p>TBD – 1-3 months before next exercise, if appropriate</p>
<p>10. Test VAA/VAG to be available on website or link as specified in the Exercise Directive (noting this is not an issue with realtime events) with message indicating that the web site be used for back-up purposes (noting users should obtain the information via SADIS/ISCS)</p>	<p>Japan</p>	<p>TBD – 1-3 months before next exercise</p>
<p>11. Clarify the status and description of eruption and if changes occur and make the information easily available</p> <p>Monitor means of issuance of VONA in guidance material (ICAO Doc 9766) expected by November 2013 to support the introduction of VONA in Amendment 76 to Annex 3 (Note 2 of 4.1).</p> <p>Indicate duration of event and if additional ash is expected.</p> <p>VONA should comply with VONA template and consider future changes provided by WOVO</p> <p>Consider posting test VONA on</p>	<p>ICAO</p> <p>KVERT</p> <p>KVERT</p> <p>KVERT</p>	<p>November 2013</p> <p>June 2013</p> <p>June 2013</p> <p>TBD - 1-3 months before next</p>

<p>website</p> <p>Clarify how differences of volcanic ash height observed and reported would be handled by VAAC Tokyo (e.g. maximum height used) as well as reporting in terms of FL for consistency. Include in Exercise Directive and contingency plan.</p> <p>Monitor results of IAVWOPSG (tasked to WOVO) with reference to including colour code in VAA</p> <p>Consider using estimated modelled data products and inform participants (clarification needed) – monitor IAVWOPSG</p>	<p>VAAC Tokyo/Anchorage and Exercise Leader</p> <p>VAAC Tokyo/Anchorage</p> <p>VAAC Tokyo</p>	<p>Exercise</p> <p>TBD – 1-3 months before next Exercise</p> <p>Report to SG/3 meeting</p> <p>March 2013 – and report to next SG/3</p>
<p>12. Clarify in next exercise when to include volcanic ash forecast in SIGMET and provide templates on SIGMET well in advance. Yelizovo (PK) MWO should also utilize the test code and provide SIGMET in a timely manner.</p>	<p>Exercise Leader/ ICAO</p>	<p>TBD – 1-3 months before next exercise</p>
<p>13. Include active participation by airlines in providing special air-reports on volcanic ash in the next Exercise Directive using routing in accordance to Annex 3 (aircraft-ACC-MWO-VAAC)</p>	<p>Exercise Leader/ airlines/ ICAO</p>	<p>TBD – 1-3 months before next exercise</p>
<p>14. consider compressing the time between the second and third issuance of VAA/VAG in the Exercise Directive (for test purposes only)</p>	<p>Exercise Leader/ ICAO</p>	<p>TBD – 1-3 months before next exercise</p>

Appendix F

Future work programme of VOLKAM exercises

2013-2015

Updated 20 February 2013

Date	Activity	Location
August 2013	VOLKAM14 prep meeting SG/3 meeting	TBD (PK, Magadan or other location)
January 2014 (to be determined at SG/3 meeting)	VOLKAM14	Volcano in Kamchatka/N Kuriles (TBD at prep mtg)
February 2014	VOLKAM14 debrief meeting/ SG/4 meeting	ICAO RO (Paris or Bangkok)
August 2014	VOLKAM15 prep meeting	TBD
January 2015	VOLKAM15	Volcano in Kamchatka or Kuriles
February 2015	VOLKAM15 debrief meeting SG/5 meeting	Paris, France
August 2015	VOLKAM16 prep meeting for exercise in Jan 2016	(consider correspondence, but if necessary, PK or Moscow)

Appendix G

TERMS OF REFERENCE OF EUR (EAST) VOLCEX/SG

The Volcanic Ash Exercises Steering Group for the (far) Eastern part of the EUR Region (EUR (EAST) VOLCEX/SG), has been established by the EANPG COG Decision 48/04 (held 6 to 8 October 2010). The main task of the EUR (EAST) VOLCEX/SG is to initiate and maintain a programme of regular volcanic ash exercises in the (far) Eastern Part of the EUR Region.

TERMS OF REFERENCE

Objective: Improve the response to volcanic eruptions and volcanic ash contamination by the relevant national supervisory authorities, service providers (ATS, AIS, ATFM, MET) and airspace users (airlines) in the (far) Eastern part of the EUR Region through to organizing of regular volcanic ash exercises in order to validate and continually improve the common volcanic ash contingency plan and procedures for the EUR and NAT Regions.

Tasks:

- Co-ordinate with all participants in the volcanic ash exercises (ACCs, airlines, VAACs, MWOs, National ATMCs ~~MATMC~~) the schedule for the exercises and their scenarios; ensuring that exercises cover the (far) Eastern part of the EUR Region that could be affected by volcanic ash, with impact scenarios on trans-east, ~~trans-polar~~ and ~~or cross-polar routes~~ and NOPAC and PACOTS (subject to confirmation from BKK Office) routes.
- Develop and keep under review regional (define) VA exercise procedures, including VA Exercise Operating Instructions (VOLCEX OPINS), and make improvements based on the lessons learnt. (Regional VA exercise procedures, and other relevant material, to be posted on the EUR/NAT Regional Office website).
- Organize in parallel with the VA exercises, awareness events such as seminars and presentations, in order to enhance the awareness of the participants regarding the hazardous effects of volcanic ash and the established contingency measures.
- Based on the outcome of the VA exercises, propose to EANPG COG improvements to the common regional volcanic ash contingency plan. ~~for the EUR and NAT Regions~~
- Report the results of its activities to the EANPG COG on an annual basis. The group should also liaise with the METG of EANPG. Additionally, through the Secretary, the group should liaise with the European and North Atlantic Volcanic Ash Exercises Steering Group (EUR/NAT VOLCEX/SG) of the EANPG COG and NAT IMG.

Composition to include appropriate fields of expertise such as ATM, MET, airspace users, regulatory authorities, VOs: Japan (~~VAAC Tokyo~~), Russian Federation (~~incl. the Main ATM Centre (MATMC) in Moscow~~), United States of America (~~incl. VAAC Anchorage~~), ICAO (~~Secretary~~) and IATA.

[Rapporteur(s) to be determined at EUR (EAST) VOLCEX/SG/1 – Russian Federation]

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