

## **Cross Polar Trans East Air Traffic Management Providers' Work Group (CPWG-PM1)**

(Paris, France May 22-24, 2019)

**Agenda Item 2** : Summary of Pertinent Issues from the ANSPs Meeting and other relevant meetings

### **VOLKAM/19 Debrief**

(Presented by State ATM Corporation of Russia)

#### **SUMMARY**

This paper presents a summary of the Volcanic Ash Exercise (VOLKAM/19) in the (far) Eastern part of the EUR Region.

## **1. Introduction**

1.1 The meeting may recall that the European Air Navigation Planning Group (EANPG) Programme Coordinating Group (COG) and North Atlantic Implementation Management Group (NAT/IMG) established the Volcanic Ash Exercises Steering Groups for the EUR and NAT Regions (VOLCEX/SG) and for the Volcanic Ash Exercises Steering Group for the (far) Eastern part of the EUR Region (EUR (EAST) VOLCEX/SG) in order to initiate and maintain a programme of regular volcanic ash exercises in the EUR/NAT Regions. One of the main goals of these exercises is to exercise the volcanic ash contingency plan for the EUR and NAT Regions (EUR Doc 019, NAT Doc 006, Part II) which was recently merged (July 2016). Typically, one exercise called VOLKAM is planned and conducted by EUR (EAST) VOLCEX/SG each year.

1.2 The objectives of the exercises is to improve the response to volcanic eruptions and volcanic ash contamination by the relevant national supervisory authorities, service providers (ATS, AIS, ATFM, MET, VAAC(s) and VO(s)) and airspace users as well as improve the common volcanic ash contingency plan for the EUR and NAT Regions (EUR Doc 019, NAT Doc 006, Part II). The Main ATM Centre in Moscow plays an active role in VOLKAM in coordinating with ANSPs and operators on accepting re-routes into Russian Federation airspace based on exercise contingency routes and operators' needs.

## **2. Discussion**

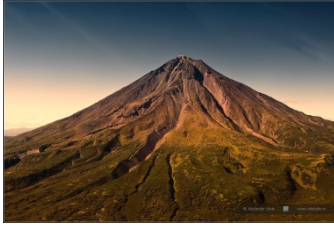
2.1 The EUR (EAST) VOLCEX/SG planned and conducted a volcanic ash exercise called VOLKAM19 that simulated two volcano eruptions of Ushkovsky and Opala in Kamchatka. VOLKAM19 took place from 2200 UTC on 18 April 2019 to 0200 UTC on 19 April 2019. The simulated volcanic ash cloud from Opala with height to FL450 moved to the southeast at 400 km/hr that impacted trans-east and Northern Pacific (NOPAC) routes as well as Pacific Organized Track System (PACOTS). The simulated volcanic ash cloud from Ushkovsky with height to FL250 moved northwest at 400 km/hr that impacted trans-east routes.

2.2 The exercise involved ANSPs (State ATM Corporation, Nav Canada, US FAA, JCAB), ATM Centres (Main ATM Center of Russia, US ATCSCC, National Ops Center – Nav Canada, Fukuoka

ATMC, Magadan, PK, Khabarovsk ACCs, Sapporo, Fukuoka ACCs, Anchorage, Okland ARTCCs, Vancouver, Edmonton ACCs), KVERT, Alaskan VO, Tokyo, Anchorage and Washington VAACs, MWO at PK, Magadan and users (American, United, Delta, JAL, All Nippon, Eva Air)

2.3 The objectives of VOLKAM19 are provided in the bullets below as well as a brief summary of achievements in the sub-bullets.

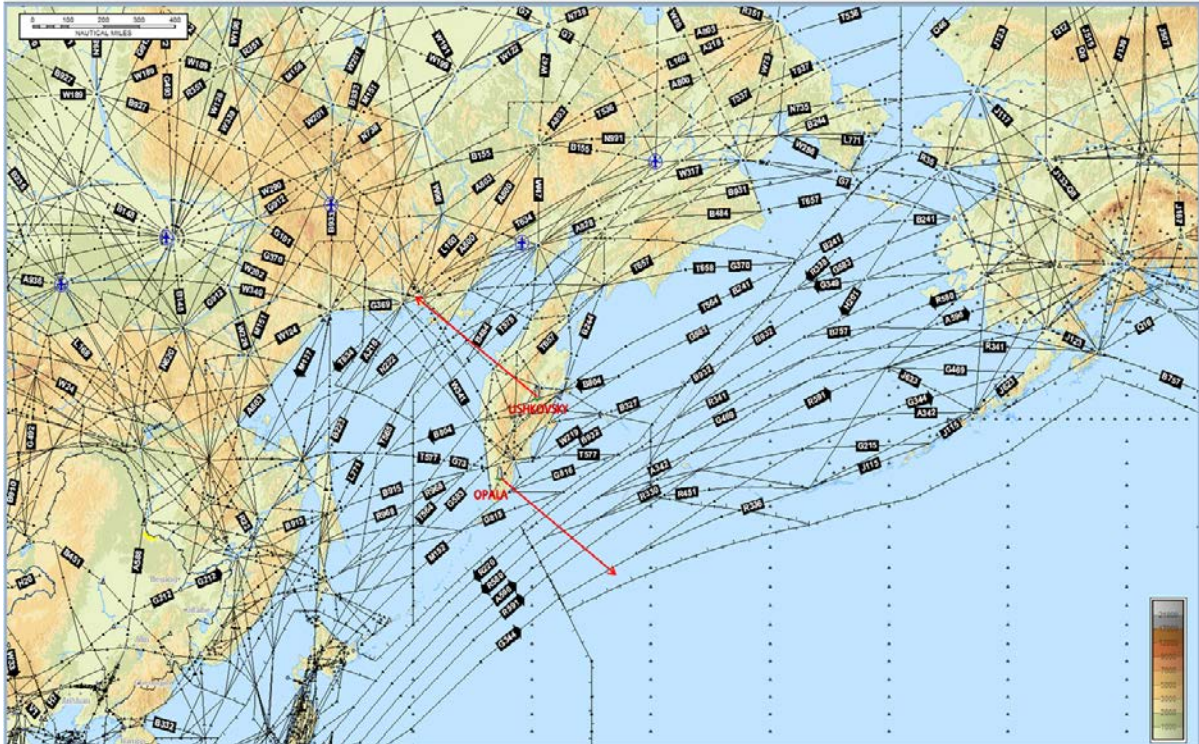
- **Demonstrate coordination procedures between all participating parties (ANSPs, ATM Centres, AIS, VO, VAACs, MWO and users);**
  - Achieved, successful as demonstrated by information flow by respective participants. Teleconferences improved through the evening with 24 participants attending in the second teleconference.
- **Demonstrate coordination between Magadan and Fukuoka ACCs using contingency Memorandum of Understanding;**
  - Coordination on simulated re-routes occurred between Magadan and Fukuoka ACCs using contingency MOU.
- **Demonstrate tactical re-routes using available methods including DARP-like test using CPDLC (re-routes to use existing route structure);**
  - DARP-like test between Magadan and Anchorage ACCs via AIDC;
  - United Airlines provided simulated re-route information for UAL79 using CDPLC to Anchorage which then was successfully retransmitted via AIDC to Magadan ACC.
- **Demonstrate diversion to Magadan to test emergency procedures;**
  - Successfully demonstrated by American Airlines simulated diversion of Boeing 787 (Flight AAL181) to Magadan.
- **Demonstrate VAAC Tokyo / VAAC Anchorage / VAAC Washington handover;**
  - Successfully demonstrated by VAAC Tokyo / VAAC Anchorage / VAAC Washington handover.
- **Demonstrate transmission of air-reports on volcanic ash in accordance to Annex 3 (aircraft->ACC->MWO->VAAC) using CPDLC, VHF and HF;**
  - Successfully demonstrated by American Airlines. Flight AAL181 filed AIREP via CPDLC to Magadan ACC.
- **Demonstrate information sharing via teleconferences and website (KVERT website with PUFF and aeronautical information).**
  - Successfully demonstrated. There were held one test and two operational telecons. KVERT PUFF information was displayed at KVERT website.



Opala



Ushkovsky



Exercise area chart

### 3. Action by the Meeting

3.1 The Meeting is invited to note the contents of this paper.

## Attachment A

### VOLKAM/19 Exercise Timeline (all times in UTC)

April 18

**20.00** – Participants gather for the exercise

**20.45** – Exercise Leader sends an invitation for a practice telecon at **21.15 UTC**

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**21.15** – Practice telecon with 17 participants. Roll call, reminder to use [volkam@matfmc.ru](mailto:volkam@matfmc.ru) address for sending copies of VONA, VAA, NOTAMs, FPL for re-routed flights indicating FIR concerned in the subject line.

**21.40** – Exercise Leader sends an invitation via email to all participants to begin the exercise

**21.45** – Explosive eruption of Opala begins

**22.02** – VONA from KVERT on the explosive eruption of Opala. The color code changed from green to red.

**22.03** – MATMC sends a NOTAM request to Russian AIS

**22.05** – YYELIZOVO issues a SIGMET

**22.05** – VAA from TOKYO VAAC

**22.15** – Explosive eruption of Ushkovsy begins

**22.16** – NOTAM P4388/19 issued by Russian AIS on Opala (in accordance to Annex 15 and indicates colour code RED (*OPALA*))

**22.19** – SIGMET appears in SADIS

FPL

EXERCISE EXERCISE EXERCISE – VOLKAM19

ACK

(FPL-UAL79-IS

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-KEWR1505

-N0496F280 DCT GAYEL Q812 ARKKK/N0505F300 Q812 SYR DCT YXI DCT  
50N082W DCT 55N087W/N0494F320 DCT 60N096W DCT GABRO DCT 65N120W  
DCT 66N130W DCT FIORD DCT GAL/N0498F340 DCT RUSOR/M085F340 T658

TK/M085F380 B237 GRUMA/K0894F380 N222 IGODA B223 LUMIN/M066F160  
Y10 LARCH Y302 JUGEM Y30 SWAMP/M065F150 Y30 DOVER/M066F160 Y30  
MELON

-RJAA1343 RJTT

-PBN/A1L1B1C1D1O1S2T1 NAV/RNP2 DAT/1FANSP2PDC DOF/190418  
REG/N216UA EET/KZBW0011 KZNY0012 CZWG0143 CZEG0311 PAZA0548  
UHMM0750 UHHH1026 RJJJ1152 SEL/QREH CODE/A1D18F RVR/75 OPR/UAL  
PER/C RALT/PAKN PASY UHMM RMK/TCAS)

EXERCISE EXERCISE EXERCISE – VOLKAM19

**22.33** VONA from KVERT on the explosive eruption of Ushkovsky. The color code changed from green to red. Info published at KVERT website.

**22.34** - MATMC sends a NOTAM request to Russian AIS

**22.35** - SIGMET (Ushkovsky)

**22.38** – VAA from VAAC Tokyo (Ushkovsky)

**22.40** – Second VAA (Opala)

**22.41** NOTAM (Ushkovsky) appears in SADIS

**22.41** NOTAM P4389 /19 color code red (USHKOVSKY)

**22.42** - VAA appears in SADIS (USHKOVSKY)

**22.44** – First NOTAM (OPALA) gets to SADIS

**22.45** – Second SIGMET (OPALA)

ACK

FPL-AAL181-IS

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-KLAX1648

-N0484F360 SUMMR1 SCTRR DCT ROBBIE J6 SNS J110 OAK DCT FOT DCT  
BOXER B453 KATCH/N0496F380 B453 MDO J179 ANI DCT ENM B240  
ERNIK/M084F380 DCT GIRLO N222 HAB B150 BIRBO B723  
ODEKA/M084S1160 T634 MAGIT/N0489S1220 R213 JMU G212 DABMA W74  
SABEM G332 GITUM GITU7A

-ZBAA1226 ZYTL

-PBN/A1B1C1D1L1O1S2T1 NAV/RNVD1E2A1 RNP4 ACAS2 II ACAS  
DAT/1FANSER SUR/260B RSP180 DOF/190418 REG/N840AN  
EET/BOXER0127 KZAK0133 KANUA0210 KURTT0231 PAZA0305  
MDO0401 ANI0452 ENM0510 UHMM0540 BUMAT0722 UHHH0842

ODEKA1020 ZYSH1024 JMU1031 ZBPE1151 SEL/ELBK CODE/AB7FE6  
RALT/KSEA PAKN UHPP ZBAA

ACK

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-N0493F300 DARRK2 MCKEY DCT LIBBO DCT BRINY DCT BOARS DCT AMAKR DCT  
LINUZ/M083F320 DCT 50N135W 53N140W DCT CJAYY/N0489F320 DCT

60N160W/M083F320 DCT LESAD/M083F340 DCT RUSOR/K0876F340 T658 TK

B237 AMETO L771 ODORA/K0870F360 T565 ANIMO/N0481F360 B337 AWE V7

ASIBE Y116 CHE V30 HWE Y14 GOLDO/N0475F380 Y381 KMC Y382 WAKIT

Y282 POPPY Y34 SUKMO Y50 HKC A1 BULAN/N0482F380 A1 DRAKE DRAKE1A

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53N140W0308 PAZA0341 CJAYY0405 60N160W0447 LESAD0521 UHPP0553

UHMM0735 UHHH0825 RJJJ0952 RCAA1316 SEL/ADRS CODE/8990D3 OPR/EVA

PER/D RALT/KLAX PANC PASY RJBB RCTP RMK/TCAS II

EXERCISE EXERCISE EXERCISE VOLKAM19)

**22.47 YELIZOVO cancels SIGMET**

ACK

(FPL-DAL167-IS

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-KSEA1821

-N0469F320 BANGR9 ARRIE J523 TOU DCT FINGS DCT JOWEN/N0501F380

DCT LOHNE DCT ARCAL/N0501F400 DCT PORGE DCT OGGOE DCT OFORD

DCT ONEIL R580 OMOTO R580 OATIS Y802 ARMOR Y810 KETAR Y811

MELON DCT

-RJAA0911 RJTT

-PBN/A1B1C1D1L1O1S1T1 NAV/RNVD1E2A1 DAT/1FANSE2PD SUR/RSP180

260B DOF/190418 REG/N513DZ

EET/CZVR0023 PAZA0128 RJJJ0619

SEL/CHAF CODE/A66CF7 RALT/KSEA PAFA PASY RJCC

RMK/AGCS TCAS II EQUIPPED NRP USA)

Reroute request from OGGOE:

ACK

(FPL-DAL167-IS

-A359/H-SDE2E3GHIJ3J5M1P2RWXYZ/LB1D1

-KSEA0000

-N0350F400 DCT OGGOE DCT KOKUN/K0888F380 B244 GEFAR G583

UB/K0901F400 G583 LATAK/K0918F410 G583 BISIV/N0496F410 G583  
MVE DCT CHE Y10 LARCH Y302 JUGEM Y30 MELON DCT  
-RJAA0527 RJTT  
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EET/UHPP0101 UHHH0314 RJJJ0357  
KOKUN0205  
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RMK/AGCS TCAS II EQUIPPED)

ACK

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KALIG/M083F330 DCT NOGAL/K0884F330 DCT OTLER DCT BANIT/K0883F330  
T657 OKLED/K0878F330 T657 TK B244 NB N991 AGURA/N0483F330 DCT  
ADREW DCT YEYV NCA30 COTLO/N0480F350 LAT66 DUKPA DCT YYQ/N0484F370  
NCA24 YYU DCT YYB DCT IMEBA IMEBA4  
-CYYZ1438 CYHM  
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CZWG1200 CZYZ1321 SEL/AMQS CODE/8990E1 OPR/EVA PER/D RALT/RCTP  
RJBB PASY PANC CYEG CYYZ RMK/TCAS II)

ACK

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ANIMO/N0481F360 B337 AWE V7 ASIBE Y116 CHE V30 HWE Y14  
NYUDO/N0479F380 Y14 GOLDO Y381 KMC Y382 WAKIT Y282 POPPY Y34 SUKMO  
Y50 HKC A1 BULAN/N0482F380 A1 DRAKE DRAKE1A  
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RCAA1239 SEL/BFQS CODE/8990E2 OPR/EVA PER/D RALT/KSFO PANC PASY  
RJBB RCTP RMK/TCAS II EXERCISE EXERCISE EXERCISE VOLKAM19)

**22.52** MATMC sends NOTAM request to Russia AIS

ACK

(FPL-EVA32V-IS

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KCC V31 GTC Y312 UWE Y32 MRE/N0485F310 Y13 CHE Y116 AWE B337

ANIMO/K0890F310 T565 PAKLI T657 TK/K0876F330 T658 NELTA/M083F330

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FAI/N0485F350 DCT 6447N14100W DCT YWY NCA22 YTH DCT YIV DCT

YPL/N0487F370 DCT YGQ DCT YSB DCT YCF DCT SYR DCT IGN IGN1

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RMK/EXERCISE EXERCISE EXERCISE TCAS II)

ACK

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YSB DCT 50N084W/N0464F320 DCT 55N090W/N0479F340 DCT 60N100W DCT

BENAX DCT 64N120W DCT 65N127W DCT FIORD DCT FRENK/M078F340 N735

BAMUS/M080F340 N735 ASBAT T634 DERUD/M079F340 T634

BANOT/M073F280 DCT

-RJCC1322 RJCH

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VIRSO/N0480F310 NCA32 YZS/N0480F320 NCA32 PEPMO/N0490F340 NCA32

TAYTA DCT 72N157W/M083F340 DCT PILUN/K0890F340 M165

BEKMI/K0880F360 B970 OKEPA A803 OSKON B485 URABI T565

BOKNA/N0470F360 T565 ANIMO/N0480F380 Y114 AWE Y116 CHE Y10

STONE DCT

-RJTT1331 RJAA RJBB

-PBN/A1L1B1C1D1O1S2 NAV/RNP2 DAT/1FANSP DOF/190418 REG/JA731J

EET/KZBW0003 CZUL0040 CZWG0152 CZEG0308 PAZA0607 UHMM0712

UHHH1033 RJJJ1200 SEL/DREF CODE/867F68 PER/D RALT/KJFK CYEG



PAFA UHMM RJCC RJTT RMK/ACASII  
-E/1556 P/256 R/UVS S/M J/L D/8 502 C SILVER A/WHITE CRANE)

**23.01 - VONA/KVERT (OPALA) Eruption stops**

ACK  
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-KPDX1816  
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61N160W DCT NEONN/N0459F340 R220 NIPPI/N0447F360 R220  
NUBDA/N0454F380 R220 NANAC Y810 KETAR Y811 MELON DCT  
-RJAA1001 RJTT  
-PBN/A1B1C1D1L1O1S1T1 NAV/RNVD1E2A1 SUR/RSP180 260B DOF/190418  
REG/N190DN  
EET/CZVR0029 PAZA0139 RJJJ0656  
SEL/DGPR CODE/A16883 RALT/KSEA PAFA PASY RJCC  
RMK/AGCS TCAS II EQUIPPED NRP USA)

Reroute request from NANZA:

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(FPL-DAL69-IS  
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-KPDX0000  
-N0458F340 R220 NANZA R220 NOLTI/N0456F350 R220 NULUK DCT  
MORLY/N0442F340 B932 BAMOK/K0814F340 B327 GITRU T564  
NAMUL/K0823F360 T564 PAKLI/K0847F380 T565 ANIMO/N0459F380  
B337 AWE V7 CHE Y10 LARCH Y302 JUGEM Y30 MELON DCT  
-RJAA0559 RJTT  
-PBN/A1B1C1D1L1O1S1T1 SUR/RSP180 260B DOF/190418 REG/N190DN  
EET/UHHH0327 RJJJ0422  
MORLY0106  
SEL/DGPR CODE/A16883 RALT/PAFA PASY RJCC  
RMK/AGCS TCAS II EQUIPPED)

**23.02 - NOTAM 2 SIGMET (OPALA)**

ACK  
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-KSEA1827  
-N0492F260 BANGR9 ARRIE J523 TOU DCT FINGS DCT JOWEN/N0473F320  
DCT LOHNE DCT ARCAL DCT PORGE/N0480F340 DCT OGGOE DCT OFORD  
DCT ONEIL/N0466F320 R580 OMOTO R580 OPULO/N0467F370 R580  
OATIS Y889 ESCAL/N0464F400 Y889 DAIGO Y88 CHINO Y16 SAPRA

G585 GUKDO GUKD1A  
-RKSII103 RKSS  
-PBN/A1B1C1D1L1O1S1T1 NAV/RNVD1E2A1 SUR/RSP180 260B DOF/190418  
REG/N1611B  
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SEL/BSGP CODE/A0F7E2 RALT/CYEG PAFA UHPP RKSI  
RMK/AGCS TCAS II EQUIPPED NRP USA)

Reroute request from OGGOE:

ACK  
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-KSEA0000  
-N0476F340 DCT OGGOE DCT KOKUN/K0860F340 DCT NAMUL B915  
TAKAD/K0870F360 B915 FI N222 HAB B150 BIRBO B723 ODEKA T634  
MAGIT/K0887S1100 R213 JMU/K0888S1040 G212 HRB A588  
NUBKI/K0886S0980 A588 CHI W107 SANKO A326 OBDIS/K0899S0950  
A326 DONVO/K0837S0890 G597 AGAVO/N0455F291 Y644 REBIT DCT  
-RKSII0632 RKSS  
-PBN/A1B1C1D1L1O1S1T1 SUR/RSP180 260B DOF/190418 REG/N1611B  
EET/UHHH0245 ZYSH0429 ZSHA0558 RKRR0609  
SEL/BSGP CODE/A0F7E2 RALT/PAFA UHPP RKSI  
RMK/AGCS TCAS II EQUIPPED)

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-KIAH1525  
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DPR DCT GGW DCT DAPOP DCT YEG DCT 56N120W/N0487F300 DCT GABUL  
DCT FRENK/M083F300 N735 ASBAT G902 MEDIG G370 BANOT B223  
AGEMO/K0896F300 B223 LUMIN/M083F300 Y10 WKE V1 CHE DCT  
-RJCC1257 RJCH  
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REG/N76021 EET/KZFW0018 KZKC0046 KZMP0116 KZLC0219 CZWG0256  
CZEG0318 PAZA0605 UHMM0738 UHHH1055 RJJJ1224 SEL/BRAH  
CODE/AA4440 RVR/75 OPR/UAL PER/C RALT/PABR UHPP RMK/TCAS)

**23.09** MATMC sends third NOTAM request to Russian AIS (Opala)

ACK  
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-KSEA1857

-N0460F320 BANGR9 PANGL DCT YZT DCT YZP DCT FRIED DCT  
LOHNE/N0460F340 DCT ARCAL DCT AKN DCT EHM/N0464F360 DCT PUGGY  
DCT NANDY R220 NATES/N0447F380 R220 NUBDA/N0458F400 DCT ALICE  
Y111 MQE Y124 HPE V34 GTC V30 KMC DCT TRE DCT KIYY DCT SAEKI  
Y36 ALISA DCT  
-RJBB1031 RJGG  
-PBN/A1B1C1D1L1O1S1T1 NAV/RNVD1E2A1 SUR/RSP180 260B DOF/190418  
REG/N1200K  
EET/CZVR0016 PAZA0127 RJJJ0645  
LOHNE0201 PUGGY0413 NANDY0505  
SEL/AKMR CODE/A05614 RALT/KSEA PAFA PASY RJAA  
RMK/AGCS TCAS II EQUIPPED NRP USA))

Reroute request from EHM:

ACK  
(FPL-DAL183-IS  
-B763/H-SDE2E3FGHIJ3J7M3P2RWXY/LB1D1  
-KSEA0000  
-N0464F360 DCT EHM DCT NANDY/N0451F360 DCT GEFAR/K0818F360 DCT  
NAMUL T564 MOROG/K0848F400 T564 PAKLI T565 ANIMO/N0461F400  
B337 AWE V7 CHE V30 HWE Y14 GOLDO Y36 ALISA DCT  
-RJBB0654 RJGG  
-PBN/A1B1C1D1L1O1S1T1 SUR/RSP180 260B DOF/190418 REG/N1200K  
EET/UHHH0350 RJJJ0444  
NANDY0128 GEFAR0251 NAMUL0319  
SEL/AKMR CODE/A05614 RALT/PAFA PASY RJAA  
RMK/AGCS TCAS II EQUIPPED)

**23.14** – Exercise Leader sends an invitation for the first operational telecon at 23.40

**23.10** Second VAA (Ushkovsky)

**23.15** - YELIZOVO SIGMET (Ushkovsky)

**23.18** - First SIGMET (Ushkovsky) from MWO Magadan

ACK  
REQ CHG FM NANZA

FPL-ANA11-IS  
-B77W/H-SDE2FGHIJ4J5J6M1M2P2RWXYZ/LB1D1  
-KORD1620  
-N00473F340 DCT RUSOR T564 SUNIP/N0471F360 T564 PAKLI DCT CHE Y10 LARCH  
Y302 JUGEM Y30 MELON DCT  
-RJAA1209 RJTT

-PBN/A1B1C1D1L1O1S2 NAV/RNVD1E2A1 DAT/1FANSP SUR/RSP180 DOF/190418  
REG/JA735A EET/UHMM0037 UHHH0316 RJJJ0407  
SEL/AEFH CODE/867FE8 RALT/KORD CYEG PAKN RJCC RMK/TCAS EQUIPPED  
E/1416 P/232 R/UYE S/M J/L D/8 437 C SILVER  
A/BLUE ANA

**23.18** SIGMET cancelled

**23.29** MATMC sends NOTAM request to Russian AIS (Ushkovsky)

**23.32** - VONA/KVERT (Ushkovsky) change of color code to orange

ACK  
REROUTE

(FPL-TST9966-IS

-B788/H-SDFLOVE1E2E3GHIJ3J4J5J6M1M2RWYZP1P2/LB1D1

-KSEA1800

-N0480F400 PORGE DCT MARCC G583 BESAT/K0830F400 G583

IRKAN/K0800F400 G583 BUMEN/N0440F400 G583

BISIV/N0440F400 G583 MVE Y116 CHE Y10 LARCH Y302 JUGEM Y30

SHELY/N0420F400 Y30 COMET/N0350F310 Y30 MELON DCT

-RJAA1007 RJTT RJGG

-PBN/A1L1B1C1D1O1S2 NAV/GBAS RNP2 DAT/1FANSP SUR/PSP180 PSP400

DOF/190418 REG/JA822J EET/CZVR0017 PAZA0124 UHMM0447 UHHH0732

RJJJ0821 SEL/BKCD CODE/86D59C PER/D RALT/PAKN RJCK RJAA

RMK/ACASII

-E/1205 P/197 R/UYE S/M J/L D/8 306 C SILVER A/WHITE CRANE)

**23.35** – Handover from VAAC TOKYO to VAAC Anchorage for OPALA

**23.36** - YELIZOVO SIGMET

**23.40-23:59** – First operational telecon. KVERT & VAAC Tokyo report on the explosive eruption of Opala & Ushkovsky. MWOs, ANSPs and airlines provide updates on the traffic situation

**23.47** – MATMC sends a NOTAM request to Russian AIS

**23.52** - NOTAM

**00.01** - VAA from TOKYO VAAC

**00.01** - Exercise Leader sends an invitation to the second telecon at 0115

**00.05 – 00.11**

AAL181 KLAX-ZBAA request a tech stop UHMM Magadan for fuel due reroute  
ETA UHMM 0115Z

**00.07** MAGADAN SIGMET (UZHKOVSKEY)

**00.09** YELIZOVO SIGMET (UZHKOVSKEY)

**00.09** MAGADAN SIGMET (CANCELLED)

**00.10** YELIZOVO SIGMET (CANCELLED)

**00.16** YELIZOVO SIGMET (OPALA)

**00.18** YELIZOVO SIGMET (Cancelled)

ACK

REROUTE VIA RUSSIA

(FPL-EVA6667-IS

-B77L/H-SDE1E2E3FGHIJ4J5M1P2RWXYZ/LB1D1

-PANC2300

-N0484F320 TED DCT 62N160W/M083F320 DCT MUNRI DCT RUSOR/K0874F340

T658 TK B237 LEMBA T575 ABGIR/K0864F360 T575 OLAMA T565

ANIMO/N0480F360 B337 AWE V7 ASIBE Y116 CHE V30 HWE Y14

NYUDO/N0477F380 Y14 GOLDO Y36 CHILY/N0476F360 Y36 ALISA ALISAB

-RJBB0746 RJOB

-PBN/A1B1C1D1L1O1S1S2 NAV/RNVD1E2A1 DAT/1FANSP2PDC SUR/RSP180

DOF/190418 REG/B16789 EET/62N160W0040 MUNRI0114 UHPP0142 UHHH0410

RJJJ0537 SEL/QSHJ CODE/899121 OPR/EVA PER/D RMK/FREIGHTER TCAS II)

ACK

(FPL-UAL857-IS

-B789/H-SADE3GHIJ1J2J4J5M1RWXYZ/LB1D1

-KSFO2034

-N0492F340 GNNRR2 AMAKR DCT LINUZ DCT 44N130W/M085F360 DCT

51N140W/M084F380 DCT 55N150W DCT 57N160W/N0501F380 DCT EHM DCT

61N170W DCT RUSOR/M085F380 T564 UMOLA/K0905F380 T564 PAKLI T565

ANIMO/M086F380 Y114 AWE Y116 CHE Y12 HWE Y14 DGC Y28 ISAKY Y60

FUE/M083F300 Y60 ONIKU/N0499F300 A593 LAMEN/K0924S0910 A593

AKARA/K0916S0920 A593 DUMET DCT

-ZSPD1207 ZSSS

-PBN/A1B1C1D1L1O1S2T1 NAV/RNP2 DAT/1FANSP2PDC SUR/260B

DOF/190418 REG/N29968 EET/KZSE0029 KZAK0047 PAZA0332 UHMM0518

UH HH0757 RJJ0846 RKRR1123 ZSHA1140 SEL/GHDE CODE/A31A34 RVR/75  
OPR/UAL PER/D RMK/TCAS)

ACK

(FPL-UAL198-IS

-B789/H-SADE3GHIJ1J2J4J5M1RWXYZ/LB1D1

-KLAX1955

-N0489F340 SUMMR1 MCKEY DCT LIBBO/N0483F360 DCT BRINY DCT  
BOARS DCT AMAKR DCT LINUZ DCT 44N130W/M085F360 DCT  
51N140W/M084F380 DCT 55N150W DCT 57N160W/N0498F380 DCT EHM DCT  
61N170W DCT RUSOR/M085F380 T564 UMOLA/K0892F380 T564 PAKLI T565  
ANIMO/M084F380 Y114 AWE Y116 CHE Y12 HWE Y14 STOUT/M083F380 Y14  
DGC Y28 ISAKY Y60 FUE/M074F300 Y60 ONIKU/N0439F300 A593  
LAMEN/K0800S0910 A593 AKARA/K0800S0920 A593 DUMET DCT  
-ZSPD1300 ZSSS

-PBN/A1B1C1D1L1O1S2T1 NAV/RNP2 DAT/1FANSP2PDC SUR/260B  
DOF/190418 REG/N29961 EET/KZOA0025 KZSE0108 KZAK0126 PAZA0412  
UHMM0559 UH HH0839 RJJ0929 RKRR1212 ZSHA1233 SEL/FLMQ  
CODE/A31A2D RVR/75 OPR/UAL PER/D RMK/TCAS)

ACK

182359 UHMMZRZX

(FLA-AAL181-IS

-ZBAA1223 UHMM

-PBN/A1B1C1D1L1O1S2T1 NAV/RNVD1E2A1 RNP4 ACAS2 II ACAS DAT/1FANSER SUR/260B  
RSP180 DOF/190418 REG/N840AN EET/UHMM0542 NOKID0606

UH HH0822

MAGIT1006 SEL/ELBK CODE/AB7FE6 RALT/KSEA PAKN UHPP ZBAA RMK/tech stop UHMM  
for fuel due reroute)

ACK

182359 UHMMZRZX

(FPL-AAL181-IS

-B789/H-SDE1E3GHIJ1J4J5M1P2RWXYZ/B1D1L

-AFIL0010

-M083F380 T657 TK G370 RIMAL2

-UHMM0115

-PBN/A1B1C1D1L1O1S2T1 NAV/RNVD1E2A1 RNP4 ACAS2 II ACAS DAT/1FANSER SUR/260B  
RSP180 DOF/190418 REG/N840AN EET/UHMM0001 SEL/ELBK CODE/AB7FE6 RALT/KSEA  
PAKN UHPP ZBAA DEP/UHMMZRZX RMK/TECH STOP UHMM FOR FUEL DUE REROUTE)

**01.01** YELIZOVO SIGMET (OPALA)

**01.03** YELIZOVO SIGMET (CANCELLED)

**01.15-01.30** – Second operational telecon. 22 participants. KVERT reports the end of eruption.  
Reports from VAACs, ANSPs, airlines.

**02.00** – End of the exercise. Cancellation of all issued NOTAMs, VONAs, VAAs, SIGMETs, etc.

**02.00-02.15** – Exercise debrief at the MATMC headquarters.