MET PANEL (METP)
MET OPERATIONS GROUP (MOG)
VOLCANIC ASH (VA)

SECOND MEETING

Buenos Aires, Argentina 27 to 28 April 2016

Agenda Item 4:   MOG Work plan and activities
             4.1 Activity 3.3

Implementing Operational Risk Severity Indicators

(Presented by IATA)

SUMMARY
This paper proposes the development and inclusion into the Volcanic Ash Advisory (VAA) by the Volcanic Ash Advisory Centre (VAAC) of Operational Risk Severity Indicators (ORSI). This information would be included as text in the Remarks box of the VAA to provide 'at a glance' situational awareness information for operators and pilots when conducting their risk assessment

1.   **INTRODUCTION**

1.1   Currently, operators use the VAA as a primary source of information for their evidence based risk assessment when deciding how to traverse areas of known volcanic ash or dispatch flights to airports which may be impacted by ash.

1.2   There is currently no confidence information provided within the VAA or its equivalent VAG to assist operators with their risk assessment. This introduces an excessive amount of subjectivity or 'what if' questions.

1.3   The VAA provides important information on the position of the ash. The aim of the ORSI is to supplement this with the provision of situational awareness information using a minimal number of indicators. These are the height extent of the eruption, the impact and the overall confidence of the VAAC evidence. This impact may be to airspace or within 50nm of airports allowing operators to see 'at a glance' if their flights may be impacted when overflying or operating into an airport within the active zone.

1.4   ORSI is only applicable to the VAA T+0 observation.

2.   **BACKGROUND**

2.1   The ORSI does not replace the operator's need to conduct a risk assessment prior to operating into an active volcanic ash area but to complement processes by providing additional information which will expedite the assessment information exchange process and reduce the number of queries received by VAACs.

2.2   The ORSI consists of a series of seven assigned numerical/alpha slots indicating situational awareness information about the:

- Eruption Height Block
- Source term
- Impact
- Confidence

ORSI DESCRIPTION:

Eruption Height Block

 The height block uses numbers and the delineation between the height blocks is purely operationally driven which can be further refined if required. The observed base of the ash can be provided if available and unless stated otherwise, the code assumes that within 75nm of the eruption site the ash is to the ground

The first slot denotes one of the following height blocks:

- 1 = High level eruption = FL250>
- 2 = Medium level eruption = FL100 – FL250
- 3 = Low level eruption GND -FL100

Source Term Parameter

The second slot will display either a 1 or 2 to denote:

- 1 = high level of confidence in the source term used or the amount of airborne ash if separated from original eruption

- 2 = low level of confidence with the source term used or amount of airborne ash if separated from the original eruption

Impact:

Slots 3 and 4 describes the impact using either 1 or 2 (LOW or HIGH)

- **SLOT 3** = Airspace
- **SLOT 4** = Airports

There is understandably, a degree of subjectivity when using LOW or HIGH and what affects one operator may not affect another but the role of the VAAC is not to decide this. Moreover, the intent is to provide a situational awareness 'at a glance' snapshot on the event. The OCC must therefore have an unambiguous definition for slot 3 and slot 4 describing impact

Definition

- **Slot 3** Airspace HIGH (1) = the extent of the ash is greater than 50nm in width or extends across multiple airways or significant amount of ash is being transported at a fast rate
- **Slot 3** Airspace LOW (2) = the ash is contained with 100nm of the eruption site and either none or a limited number of airways affected
- **Slot 4** Airports HIGH (1) = Ash is likely to be within 50nm or spread across a major or secondary commercial airport
- **Slot 4** Airports LOW (2) = Ash is not likely to affect any major or secondary commercial airports

Confidence

- **Slot 5** = HIGH (H) or LOW (L) confidence in the observed position of the ash
- **Slot 6** = HIGH (H) or LOW (L) confidence in the observed height of the ash
- **Slot 7** *(optional when required)* HIGH (H?) or LOW (L?) confidence in the base of the ash (further than 75nm from the eruption site unless stated)

The VAA is the output of the VAAC forecaster's best judgement after assessing the observed and forecast position of the ash cloud using all of the evidence available at the time. It is accepted that the strength of the evidence varies for a multitude of reasons. Equally, this can be applicable to the eruption source parameters, the meteorology or both. The intent of the ORSI is to provide a broad level confidence which can be supplemented by a more detailed VAA confidence explanation. It is not intended to be the single source of confidence

Example: 2/1/1/2/L/H

Plain language debrief – medium level ash observed with well understood source term or amount of airborne ash. Extensive airspace impact but unlikely to affect any major or secondary airports. The confidence in parts of the polygon boundary is LOW but the confidence in the observed height is HIGH

Unknown information

Unknown information would be indicated by adding a slash (/). This would be expected in the initial VAA

3.   **CONCLUSION**

3.1   In view of the foregoing the group is invited to consider the following conclusion:

3.2   The group agree to this proposal and an ad hoc group be formed to develop an implementation plan.

4.   **ACTION BY THE METP-WG/MOG**

4.1   The METP-WG/MOG is invited to:

4.2   Discuss the proposal

4.3   Agree to an implementation timeframe