

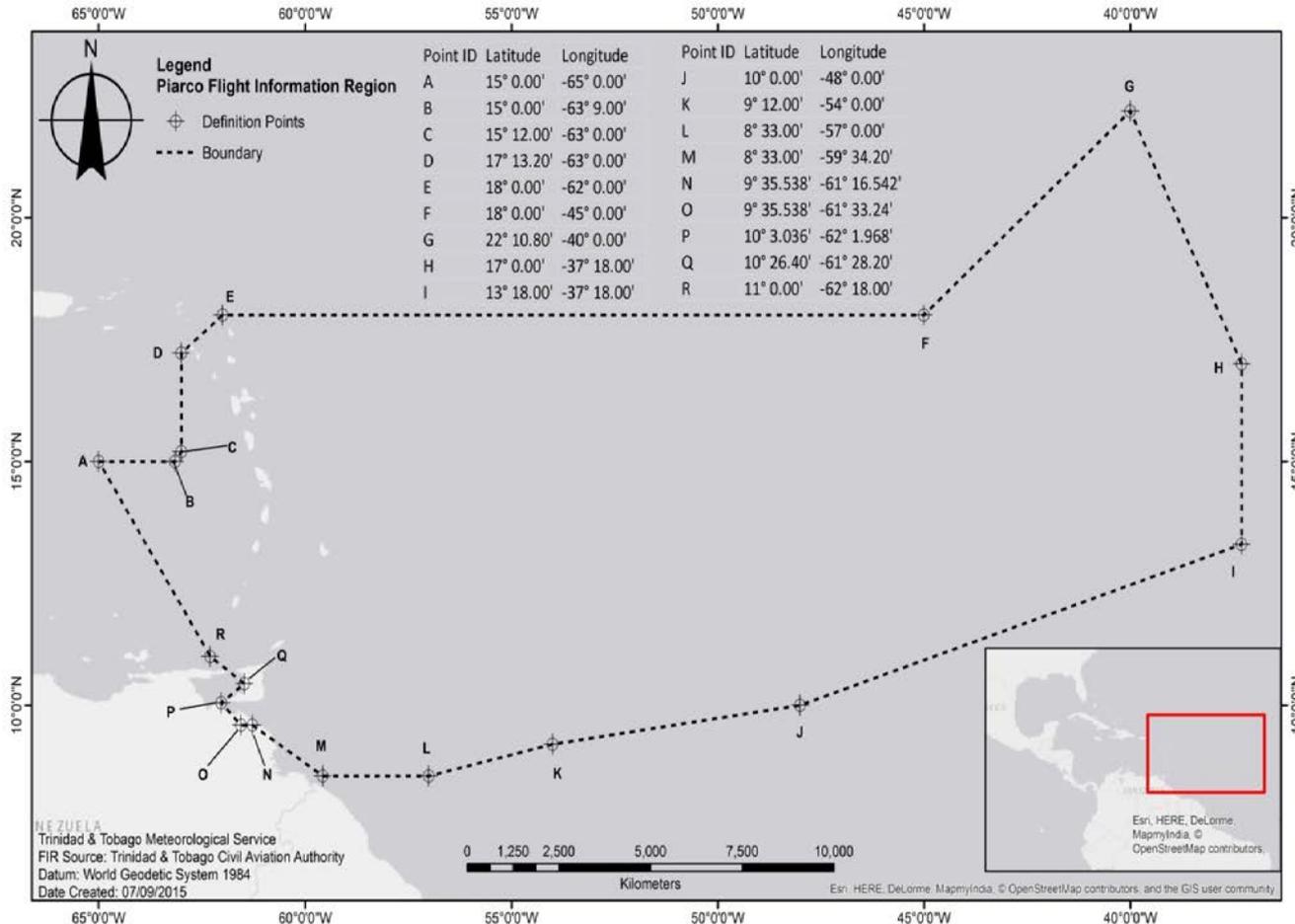
Piarco FIR SIGMETS

Quality Improvements, gaps, and
areas for improvement



GREPECAS MET Programme Projects for the CAR Region Meeting
México City, Mexico, from 28 February to 2 March 2018

Piarco FIR



Shared
 Boundaries:

1. New York Oceanic West & East
2. Santa Maria Oceanic
3. Sal Oceanic
4. Dakar Oceanic
5. Cayenne
6. Paramaribo
7. Georgetown
8. Maiquetia
9. San Juan

TTZP SIGMET Procedures



TTZP PIARCO FIR SIGMET QUICK GUIDE

*SIGNIFICANT WEATHER,
TROPICAL CYCLONE, AND
VOLCANIC ASH SIGMETS*

WI 750-03-06

- WMO Workshop for Aeronautical Competencies and SIGMETs for NAM/CAR Regions, Costa Rica, August 25-27 2015
- Based on sample in WP/19 of the 19th Meeting of the MET Sub-group APANPIRG, 3-6 August 2015
- TTZP Quick Guide implemented on September 30th 2015
- Over the subsequent year SIGMET quality improved substantially

Quick Guide

- Covers WC, WS, and WV SIGMETs
- Refers to Annex 3 and the CAR/SAM SIGMET Guide
- Does not include procedures for Toxic Chemical or Radioactive Clouds

General SIGMET Procedures

1. Continuously monitoring the airspace using satellite imagery, radar imagery, and AIREPs when available
2. Upon identification of a hazard relevant message is prepared by the Forecaster and issued via AFTN/AMHS
3. SIGMETs are reviewed, then updated and cancelled as required

Typical WV Procedures

- Usually initiated by Volcanic Ash Advisory from Washington VAAC
- Reports received from the Volcanic Observatory are relayed to the VAAC for guidance
- Reports received from aircraft are verified by contacting the Volcanic Observatory and the VAAC
- Once ash/eruption is confirmed SIGMET is issued

Typical WC Procedures

- Observational and model data from the Miami RSMC/TCAC are most often used for WC SIGMETs
- Model guidance can be used to issue Forecast WC SIGMETs when a TC has not yet formed

Typical WS Procedures

- Issued based on satellite, radar, and aircraft observations and sometimes model predictions, e.g. with jet streams there is the potential for MOD/SEV turbulence

Coordination between ATS, AIM, and MET

- Critical for successful SIGMET issuance
- TTMS/TTCAA LoA specifies the exchange of SIGMETs and AIREPs
 - ATS provides AIREPs when received, and when TTMS makes a special request
 - TTMS issues SIGMETs directly to the ANSP via AIM

Agreement with MCAA

- TTMS also has a LoA with the Meteorological Unit (MU) of the Montserrat Civil Aviation Authority
- The MU is responsible for:
 - Providing WV-related information to the TTMS
 - Verifying information when requested

Entities Relevant to VA or VA ERUPTION

MWO

ANSPs

AIM

UWI Seismic
Research Unit

Montserrat
Volcano
Observatory

Institut de
Physique du
Globe de Paris

KNMI

USGS

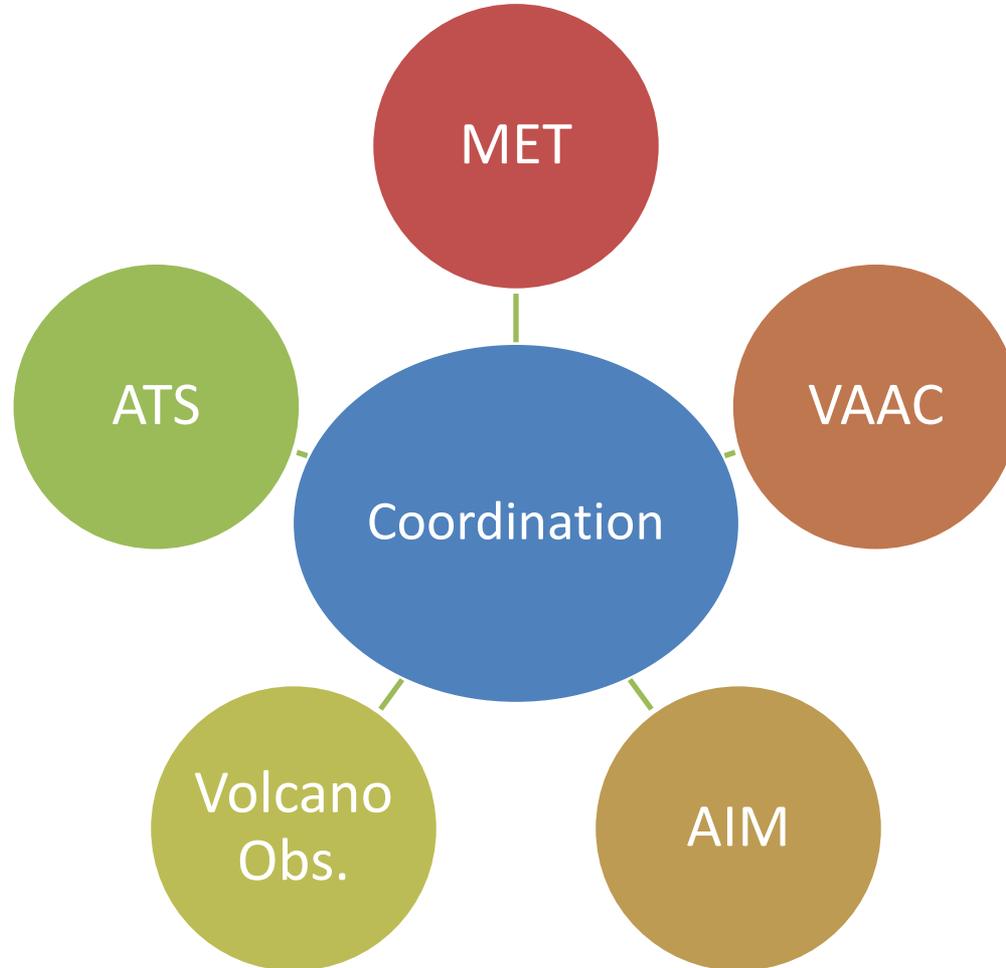
Note:

- **90% of eruptions are explosive in the EC**
- **87% strictly explosive**

Gaps in Arrangements

- For WV SIGMETs specifically,
 - There are 17 potential volcanoes in TTZP FIR
 - No arrangements with volcano observatories, ANSPs, and TTZP MWO
 - No operational agreements with the French & Dutch authorities

Coordination Requirements



Coordination with VAAC and US NWS

- Initiate web chat forum with VAAC, Piarco MWO, and the US NWS
- Can be useful for coordinating SIGMET issuance for WS & WC as well
- Slow-going process obtaining buy-in from Forecasters

Regional Challenges (All SIGMETs)

- Few routine AIREPs reach the MWO, and even fewer special AIREPs
 - A long standing project has been the introduction of mandatory meteorological reporting points in the Piarco FIR
- E.g. lack of AIREPs for CAT means no SIGMETs for other aircraft with similar flight plans

Regional Challenges

- Intra-regional differences in SIGMET message coding
- Multiple or confusing SIGMETs for phenomena near border of FIRs
 - No communication
 - No coordination
- Errors in the coding of SIGMETs
- No procedures for toxic chemical or radioactive clouds in the airspace

Recommendations

- All relevant parties concerning WV SIGMETs should at least have operational arrangements in place
 - These could then be formalized into a Letter of Agreement
- There should be a coordinated effort for SIGMET issuance, which includes the all regional MWOs and the RSMCs - VAAC & TCAC

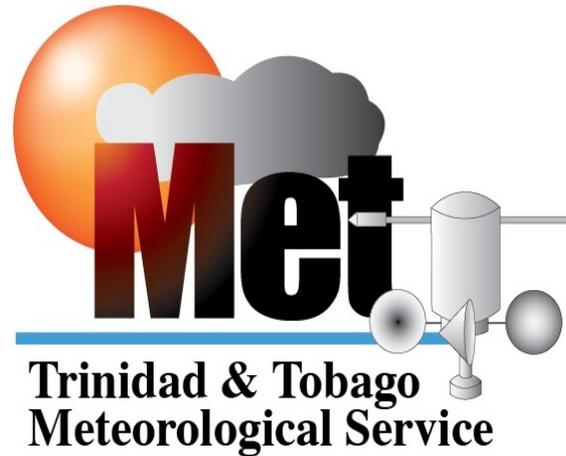
Recommendations

- MWOs should aim to increase the amount of AIREPs in their airspace of responsibility
 - Airlines should be encouraged to report, especially special AIREPs
 - CAA regulators should have an input
- MWOs should aim to comply with the Annex 3 template for SIGMETs

Recommendations

- MWOs should agree with the ANSPs on actions to be taken when toxic or radioactive clouds are in the airspace
- Even without clear guidance, MWOs and ANSPs can work out interim measures
- An exercise using TEST data should be planned to familiarize MWOs with the information

Thank you



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