V. C. BIRD AIR TRAFFIC MANAGEMENT CONTINGENCY PLAN

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FOREWORD

This Contingency Plan forms part of the overall national contingency planning for Antigua and Barbuda, this is in reference to ICAO Annex 11 – Air Traffic Services Chapter 2, paragraph 2.32 and Attachment C. The Plan is developed and controlled by the Chief Air Traffic service and approved by the Permanent Secretary of the Ministry of Civil Aviation.

It is provided for the safe continuation of air traffic through the V. C. Bird Terminal Control Area (TMA) during periods when Air Traffic Services (ATS) may be disrupted or unavailable, or when airspace may be affected as a result of a major earthquake, fire, Bomb explosion, public health emergencies, volcanic ash cloud, , severe weather events, other natural disasters, industrial action / labour unrest or acts of unlawful interference with civil aviation.

Aircraft flying through the V. C. Bird TMA during activation and operation of this Contingency Plan, are expected to comply with the requirements of this Plan and to cooperate with other airspace users as necessary for continued safety of air navigation.

CONTENTS

1 DEFINITIONS AND ABBREVIATIONS

1.1 DEFINITIONS

Aircraft: Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

AIRPROX : The code word used in an air traffic incident report to designate aircraft proximity.

Air Navigation Services: Services provided to air traffic during all phases of operations including air traffic management (ATM), communication, navigation and surveillance (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical information services (AIS).

Airspace of a Sovereign State:
Sovereign airspace refers to airspace as established over the sovereign territory of a state or an FIR boundary as established by ICAO under the management or control of a State.

Air Traffic: All aircraft in flight or operating on the manoeuvring area of an aerodrome.

Air Traffic Control Service: A service provided for the purpose of:

a) Preventing collisions:
   1) Between aircraft, and
   2) On the manoeuvring area between aircraft and obstructions; and
b) Expediting and maintaining an orderly flow of air traffic.

Air Traffic Flow Management (ATFM): A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

Air Traffic Management (ATM): The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

Delegated or Assigned Airspace of a Sovereign State:
Delegated airspace refers to airspace for which the provision of air traffic services or air navigation services have been delegated to a state or FIR either by ICAO or by a state due to contingency.

Incident: An occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operation.

Level 1 Contingency: Partial system failure or degradation of ATM system that can be managed within the FIR or ACC with the local contingency plan or facilities.

Level 2 Contingency: Total failure of the entire ATM system or air navigation system requiring the assistance or intervention of adjacent FIR(s) for the provision of ATS.

Level 3 Contingency: Total failure of the entire ATM system or air navigation system requiring the avoidance of the concerned FIR or portion of airspace.

NOTAM: A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Safety Management System: A system for the management of safety at aerodromes including the organization structure, responsibilities, procedures, process and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of the aerodrome.

Safety: The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

State Safety Programme (SSP): An integrated set of regulations and activities aimed at improving safety.

1.2 ABBREVIATIONS

ACC: Area Control Centre
AFTN: Aeronautical fixed telecommunication network
AIM: Aeronautical Information Management
AIP: Aeronautical Information Publication
AIREP: Air Report
ANS: Air Navigation Services
ANSP: Air Navigation Services Provider
APP: control office or approach control or approach control service
ATC: Air Traffic Control
ATFM: Air Traffic Flow Management
ATM: Air Traffic Management
ATS: Air Traffic Services
CDM: Collaborative Decision Marking
CNS: Communications, navigation and surveillance
COO: Chief Operation Officer
FIR: Flight information region
FIS: Flight information service
FLAS: Flight level Allocation Scheme
HF: High frequency
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IFBP: IATA In-flight Broadcast Procedure
IFR: Instrument flight rules
LOA: Letter of Agreement
MET: Meteorological
MHZ: Megahertz
MWOs: Meteorological Watch Office
NOVA Exp: No Volcanic Ash Expected
NOF: International NOTAM office
NOTAM: A notice to airmen
PANS: Procedures for air navigation services
SAR: Search and rescue
SSR: Second Surveillance Radar
TIBA: Traffic Information Broadcasts by Aircrafts
VAA: Volcanic Ash Advisory

VAACs: Volcanic Ash Advisory Centers Region
VAG: Graphical volcanic ash
VAR: Volcanic Activity Report
VFR: Visual flight rules
VHF: Very high frequency

2. OBJECTIVES

2.1 This contingency plan has been developed to detail the contingency arrangements which will permit the continuation of air traffic in the event of disruption or potential disruption of Air Traffic Services and systems.

2.2 It aims to;

a) Provide a contingency response framework for the V. C. Bird TMA to ensure the safe, expeditious, effective and secure management of aircraft operations in the TMA, including transiting between other TMAs and Piarco and San Juans FIR during contingency events.

b) Ensure timely and appropriate responses to all events resulting in disruption to the provision of Air Traffic Services (ATS), or in which ATS is involved, and hence to normal aircraft movement; and

c) Provide a greater degree of certainty for airspace and aerodrome users during contingency operations.

3. SCOPE OF THE PLAN

3.1 The plan considers contingency situations which may result in a degradation of the ATS provided. (limited Air Traffic services (no service)

3.2 The Contingency Plan is structured to provide contingency measures or procedures to manage the following contingencies:

a) Breakdown or interruption of ATM system (Communication and Navigation) ATM Operations and Human Factors);

b) Natural Disasters (Volcanic Eruption, Earthquake, Tsunami, Extreme Weather, etc.);

c) Industrial Action or Labour Unrest affecting Air Navigation Services;

d) Security Challenges affecting Air Navigation System (Acts of unlawful interference and conflict zones, etc.

e) Public Health Emergency;

3.3 The plan shall be coordinated with adjacent States and civil aviation authorities responsible for air navigation services in the adjacent TMAs and FIRs in accordance with the Letters of Agreement (LOAs) established between TMAs and adjacent FIRs concerned.

4. TERMINAL CONTROL (TMAs) AND FLIGHT INFORMATION REGIONS (FIRs) AFFECTED

4.1 TMAs AND FIRs

a. **TJSJ FIR**

b. **PIACO FIR**

c. **TFFR TMA**

d. **TNCM TMA**

e. **TKPK CONTROL ZONE**

f. **TRPM CONTROL ZONE**

4.2 The contact details of the civil aviation authorities and organizations concerned are contained in Appendix D. These details will be kept up to date and relevant information provided to the focal point who will advise as soon as practicable for the purposes of Review.

5. MANAGEMENT OF THE CONTINGENCY PLAN

5.1 LEVELS OF ATM CONTINGENCY

5.1.1 The following are levels of ATM contingencies that determine the planning for the effective management of contingencies:

5.1.2 **LEVEL 1 CONTINGENCIES:** This refers to partial system failure or degradation of ATM system that can be managed within the TMAs or ATS unit with the local contingency plan or facilities. In level 1 contingency, users may expect to fly within the affected airspace but with limited ATS such as limited voice communication, increased separation, delays or application of ATFM measures. In level 1 contingency, users may expect to fly within the V. C Bird TMA but with limited ATS such as limited voice communication, increased separation minima and delays.

5.1.3 **LEVEL 2 CONTINGENCIES:** This refers to total failure of an entire ATM system or air navigation system requiring the assistance or intervention of an ATS Unit located in another State for the provision of ATS. Under Level 2 Contingencies, the airspace is considered safe, but the responsible ATS Unit is unable to provide adequate ATS due to contingency events such as industrial action, public health emergency, earthquake, etc. In level 2 contingency users may expect to fly within the affected airspace but with limited ATS within specified contingency routes or Simplified Route Network with the application of flight level allocation scheme.

5.1.4 **LEVEL 3 CONTINGENCIES:** Total unavailability of the airspace requiring the avoidance of V. C. Bird TMA or portions of it. Under level 3 contingency, the airspace is closed, and users are required to avoid the airspace.

Level 3 contingencies may include:

a) Airspace Not Safe, due to causal events such as Hurricanes, industrial action, earthquake, etc. affecting the provision of ATS.

b) Airspace Not Available, due to causal events such as national security-political decisions, civil unrest, imposition of sanctions, etc. necessitating the avoidance of such airspace.

6. ATM OPERATIONAL CONTINGENCY GROUP (AOCG)

6.1 The ATM Operational Contingency Group (AOCG) function will be convened and has the primary responsibility to oversee the day-to-day operations under contingency arrangements, and coordinate operational ATS activities, during hours of operation, throughout the contingency period. The AOCG will include any necessary specialist personnel input from the following disciplines:

· Air Traffic Services including MET and AIS
· Airport operations
· ATS equipment maintenance service provider ECCAA
· Disaster Management Coordination Agency (NODS)
· Search and Rescue
· Local airport operators

6.2 The AOCG functions shall include:

- keep up to date regarding the contingency situation;
- organize contingency teams as required;
- keep in contact with, and update all affected airspace and system users, customers, and other relevant stakeholders;
- exchange up-to-date information with the adjacent ATS authorities concerned to coordinate contingency activities;
- notify the contingency situation sufficiently in advance and/or as soon as possible thereafter; vii) take necessary action for issuing NOTAMs according to this plan or as otherwise determined by the contingency situation. Where the contingency situation is sufficiently foreseeable, the relevant NOTAMs will be issued 48 hours in advance of the contingency events.

7. IMPLEMENTATION OF THE PLAN

7.1 In the event of adoption of contingency procedures, V. C. Bird ATS will notify all affected agencies and operators appropriately.

7.2 In Limited-Service situations the V. C. Bird ATS will decide upon the level of notification necessary and take action as required to cascade the information. In this case notification of any service limitations and traffic management measures will be promulgated to operators and adjacent ANSPs via AFTN.

7.3 In No Service situations it is likely that the ATC facility involved will be subject to evacuation. In this instance the V. C. Bird ATS will issue NOTAMs and broadcast on appropriate frequencies that contingency procedures have been initiated. Operators in receipt of the contingency message are asked to forward this information to affected flights wherever possible.

7.4 The notification process employed by V. C. Bird ATS s is detailed in this plan; however, the general format will be as follows: Issue a NOTAM advising operators of the evacuation (appendix C).

8 PUBLIC HEALTH EMERGENCIES

8.1 Details of action to be taken by the air navigation services provider, pilots and airport users in the event of public health emergencies are contained in appendix F to this Contingency Plan.

9. VOLCANIC ASH CONTINGENCY PLAN

9.1 Details of action to be taken by the air navigation services provider, pilots and airport users in the event of Volcanic Ash cloud are contained in appendix E to this Contingency Plan.

10.HURRICANE CONTINGINCY PLAN

10.1 Details of actions to be taken by the air navigation services provider, pilots and airport users in the event of a Hurricane are contained in appendix G to this Contingency Plan.

11. CONTINGENCY ROUTE STRUCTURE

11.1 In the event of disruption, the ATS provided by V. C. Bird Air Traffic Services, contingency routes will be introduced to ensure safety of flights and to facilitate limited flight operations commensurate with the prevailing conditions.

11.2 The contingency route structure for international flights is detailed in Appendix A to this document. If circumstances dictate, all flights shall be temporarily suspended until a full assessment of the prevailing conditions has been determined and sufficient air traffic services restored.

12. AIR TRAFFIC MANAGEMENT AND CONTINGNECY PROCEDURES

a. AIR TRAFFIC SERVICES RESPONSIBILITIES

i. In the event that **ATC** cannot be provided within the **V.C. Bird TMA**, the **V. C. Bird ATS** department shall publish the corresponding **NOTAM** indicating the following: -

a) Time and date of the beginning of the contingency measure;

b) Aerodromes available for landing and airspace available for over flying traffic;

*c) Details of the facilities and services available and any limitations on **ATS** provision (e.g. **APP & TWR**);*

d) *Expected date and time for the restoration of normal services*.

ii. In the event that the **V. C. Bird** is unable to issue a **NOTAM**, the Piarco ACC will take action to issue the **NOTAM** of closure upon notification by V. C. Bird Air Traffic Service.

b. SEPARATION

i. Separation criteria will be applied in accordance with the V. C. Bird Air Traffic Manual of Operations, Procedures for the Air Navigation Services-Air Traffic Management **(DOC 4444)** and the Regional Supplementary Procedures **(DOC 7030)**.

c. LEVEL RESTRICTIONS

i. Where possible, aircraft on long haul international flights shall be given priority with respect to cruising levels.

d. OTHER MEASURES

i. Other measures related to the closure of airspace and the implementation of the ATS contingency plan within the **V. C. Bird TMA** may include the following: -

a) Suspension of VFR Operations;

b) Delay or suspension of general aviation IFR operations, and;

c) Delay or suspension of commercial IFR Operations.

13. TRANSITION TO CONTINGENCY SCHEME

a) During times of uncertainty when airspace closure seems possible, aircraft operators should be prepared for a possible change in routing while en-route. This will require familiarization with the alternative routes outlined in the contingency scheme (See Appendix A) as well as what may be promulgated by the V. C. Bird Air Traffic Services via **NOTAM** or **AIP**.

b) In event of airspace closure that has not been promulgated, **V. C. Bird ATS** will, if possible, broadcast to all aircraft in the **V. C. Bird TMA**, that the airspace is closed or affected and to stand by for further instructions.

c) The V. C. Bird Air Traffic Services recognizes that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternative routings. **V. C. Bird TMA** will be alerted to respond to any request by aircraft and react commensurate with safety.

14. TRANSFER OF CONTROL AND COORDINATION

1. The transfer of control and communication will be at the common TMA boundaries of: -
   a) V. *C. Bird TMA – Piarco FIR;*
   b) V. C. Bird TMA – Pointe-a-Pitre TMA;
   c) V. C. Bird TMA – San Juan FIR and;
   d) V. C. Bird TMA – Princess Juliana CTA.

2. **V. C. Bird TMA** will also review current coordination requirements in light of contingency operations or short notice of airspace closure. (See Appendix B – Contingency Coordination Procedures)

15. PILOTS AND OPERATORS' PROCEDURES

a. The plan is designed to provide two alternate routes, one eastbound and one westbound for opposite direction, using the existing ATS route structure. This will allow for a safe and orderly flow of air traffic through the **V. C. Bird TMA**.

b. All aircraft proceeding along the ATS routes established in this Contingency Plan shall abide by the Instrument Flight Rules (IFR) and shall be assigned a flight level in accordance with the **ICAO Annex 2**, **Appendix 3 – Table of Cruising Levels**.

c. Fly along the route or as close as possible to the center line of the assigned contingency route.

d. Maintain a continuous watch on the emergency frequency 121.5Mhz and VHF frequency 119.1 published for the V. C. Bird Approach unit and transmit on that frequency, in English, the real or estimated position at the reporting point.

e. Operate transponder at all times during the flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. Transponders should be set to the last assigned discrete code or select code 2000 if ATC has not assigned a code.

f. Pilots are required to maintain during the entire flight time within the **V. C. Bird TMA**, the flight level last assigned by the last ATC unit responsible prior to the aircraft entering the **V. C. Bird TMA**. Under no circumstances shall pilots change their level, except in cases of emergency and for flight safety reasons.

g. If an emergency, or any other circumstances likely to affect flight safety, makes it impracticable to maintain the flight level assigned for transit through **V. C. Bird TMA**, climb or descend well to the right of the centerline of the contingency route being flown, immediately broadcast the emergency level change and any other pertinent information.

16. OVERFLIGHT APPROVAL

a. Where required, aircraft operators shall request overflight approval from States for flights operating through airspace under their jurisdiction.

b. In contingency situations, flights may be re-routed at short notice, and it may not be possible for operators to give the required advance notice in a timely manner to obtain approval.

c. States responsible for the airspace in which contingency routes are established should consider making special arrangements to expedite flight approvals in these contingency situations.

17. CONTINGENCY UNITS

a) The ATM national contingency unit assigned the responsibility of monitoring developments that may dictate the enforcement of the contingency plan and coordination of contingency arrangements is: -

Agency: Air Traffic Services – Ministry of Civil Aviation

Contact Person: Shenneth Phillips – Chief of Air Traffic Services
Telephone: (268) 562 0301 or 0302
(268) 764 3328 (Mobile)

Alternate: Lorraine Davis – Deputy Chief Air Traffic Services
(268) 562 5232 (Office)
(268) 728 0396 (Mobile)

Alternate: Eugene Silcott – Acting Air Traffic Service Operations Officer
(268) 562 5235 (Office)
(268) 764 3468 (Mobile)

Fax: (268) 562 3040 0

Email: shenneth.phillips@ab.gov.ag or shennethp@yahoo.com
lorraine.davis@ab.gov.ag or lorrainedavis11@gmail.com
eugene.silcott@ab.gov.ag or silcotte@gmail.com

b) The national contingency unit will liaise with the **ICAO NACC** Regional Office.

18. REROUTING SCHEME

a) In the event of a complete Air-to Ground/ Ground-to-Air and Point-to-Point Communications failure within the **V. C. Bird TMA** aircraft operators should file their flight plans using the alternative Contingency Routes (CR) listed in Appendix A.

b) All aircraft shall establish and maintain contact on the published **VHF** or **HF** frequencies of the ATS units responsible for the airspace being traversed.

19. METEOROLOGICAL SERVICES (MET)

19.1 The Antigua and Barbuda Met Services **(ABMS)** is the designated meteorology service provider in Antigua and Barbuda.

19.1.1 **ABMS** provides meteorological services for international and domestic air navigation. In order to comply with the **ICAO** requirements for aeronautical meteorology specified in Annex 3 – Meteorological Service for International Air Navigation, **V. C. Bird ATS** would ensure regular provision of the following products and services:

a) Aerodrome observation and reports – METAR, SPECI, local MET REPORT, and SPECIAL; and

b) Flight briefing and documentation.

19.2 Antigua & Barbuda Meteorological Service (ABMS) provides the following products and services on behalf of V. C. Bird International Airport

a) Terminal Aerodrome Forecast (TAF);

b) Aerodrome Forecast Amendment

c) Aerodrome Warnings;

d) Aircraft Observations; and

e) Information for ATS, SAR and AIS

19.3 It is expected that the **ABMS** services will continue to be available in the event of an ATS contingency situation. However, should ATS be completely withdrawn, timely MET information may not be immediately available to pilots. Alternative means of obtaining up to date MET information concerning the **V. C. Bird TMA** will be provided to the extent possible through the adjacent **ATS** authorities.

Depending on the level of contingency, methods of communication with ABMS shall be via telephone, fax, email, or Satellite Phone.

20.SEARCH AND RESCUE (SAR)

20.1 The **SAR** authority responsible for Antigua and Barbuda is the Antigua and Barbuda Defense Force (maritime)and the Royal Police Force Antigua and Barbuda

(RPFAB) Rescue Coordination Centre **(RCC)**. Tel: 268-4621458 268-4623206

20.2 The **AOCG** will oversee **SAR** coordination and disseminate relevant contact information.

21. POINTS OF CONTACT

a) A list of contact information for States/International Organizations to be used when contingency measures are activated is provided in **Appendix D**

DOCUMENT AND APPROVAL STATUS

The signatures below indicate that this document has been reviewed, accepted and demonstrates that the signatories are aware of all the requirements contained herein and are committed to ensuring their provision.

AUTHORIZING SIGNATURES

Edson Joseph
Permanent Secretary Ministry of
Public Utilities, Civil Aviation
Transportation and Energy

Shenneth Phillips
Chief Air Traffic Services

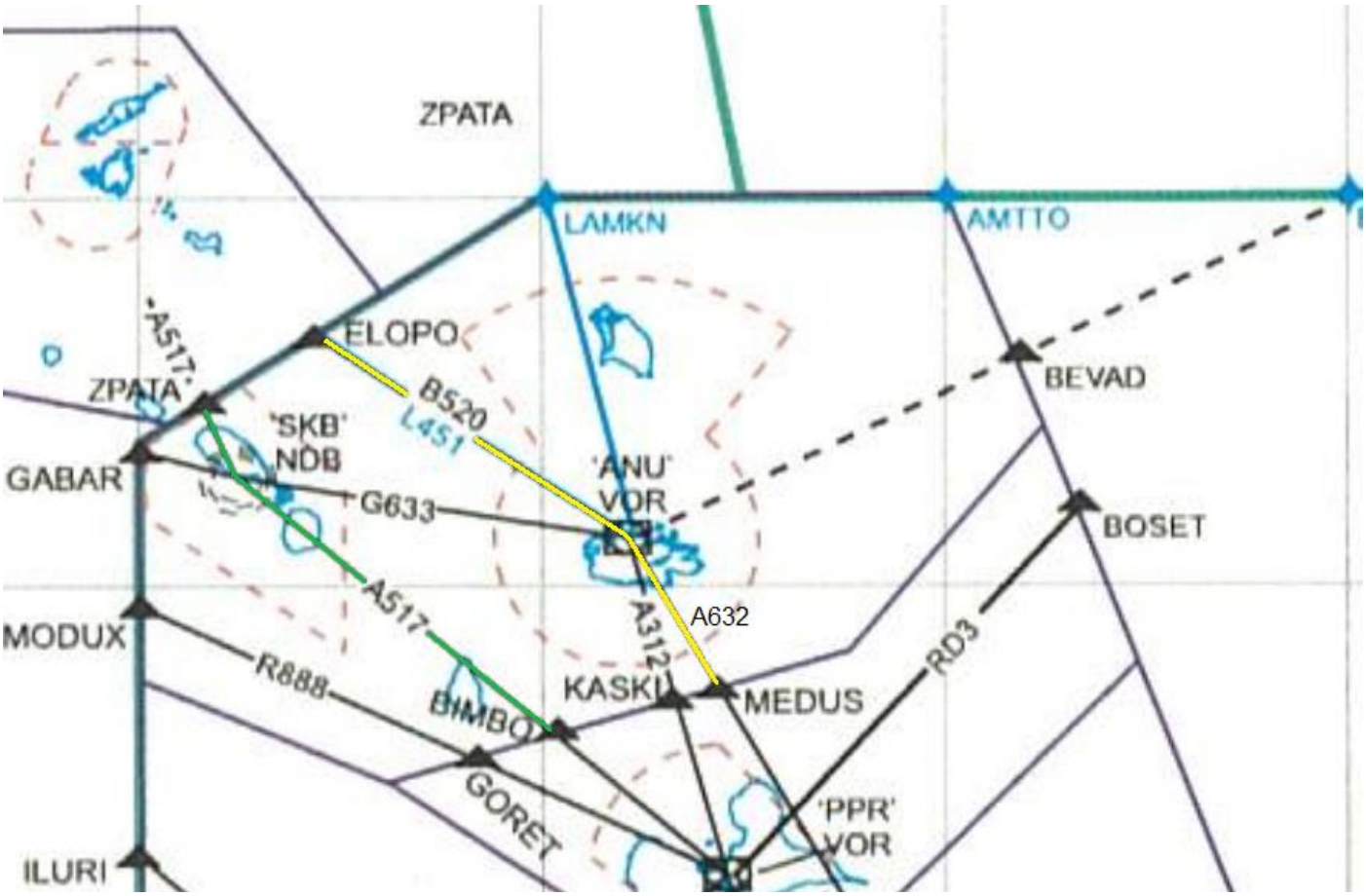
APPENDIX A

Alternate Contingency Routes (CR)

1. Traffic Eastbound through the V.C. Bird TMA shall enter via ELOPO and proceed ELOPO B520 ANU A632 MEDUS

2. Traffic Westbound through the V. C. Bird TMA shall enter via BIMBO and proceed BIMBO A517 SKB A517 ZPATA.

See chart below.



APPENDIX B

Coordination Procedures

1. In the event that the **V.C. Bird APP/TWR** is out of service and no **ATS** is available for the **V.C. Bird TMA**, air traffic services will be delegated to the designated **ATS** authorities listed below.

   PIARCO ACC - VHF 123.7 KHZ
   Le Raizet RAPCON - VHF 121.3 KHZ

APPENDIX C

Sample **NOTAMS**

a) AVOIDANCE OF AIRSPACE

NOTAM ……. DUE TO DISRUPTION OF **ATS** IN THE **VC Bird TMA** ALL ACFT ARE ADVISED TO AVOID THE TMA.

b) AIRSPACE AVAILABLE LIMITED ATS

NOTAM ……. DUE TO ANTICIPATED DISRUPTION OF ATS IN THE V. C. BIRD TMA ALL ACFT ARE ADVISED THAT THERE WILL BE LIMITED ATS. PILOTS MAY EXPERIENCE DLA AND OVERFLIGHTS MAY CONSIDER AVOIDING THE AIRSPACE.

c) CONTINGENCY PLAN ACTIVATED

NOTAM ……DUE TO DISRUPTION OF ATS IN V C. BIRD TMA ALL ACFT ARE ADVISED THAT THE V. C. Bird INTERNATIONAL CONTINGENCY PLAN FOR ACFT INTENDING TO OVERFLY ITS TMA IS IN EFFECT. FLIGHT PLANNING MUST BE IN ACCORDANCE WITH THE CONTINGENCY ROUTES LISTED AND FL ASSIGNMENT. PILOTS MUST STRICTLY ADHERE TO THE CONTINGENCY PROCEDURES. ONLY APPROVED INTERNATIONAL FLIGHTS ARE PERMITTED TO OVERFLY ANTIGUAN AIRSPACE.

d) NON-ADHERENCE TO THE CONTINGENCY PLAN

NOTAM ……. OPERATORS NOT ABLE TO ADHERE TO THE CONTINGENCY PLAN SHALL AVOID THE ANTIGUA TMA.

APPENDIX D

POINT OF CONTACT FOR ALL CONCERNED STATES AND ORGANIZATIONS

STATE/ INTERNATIONAL ORGANIZATION	POINT OF CONTACT	TELEPHONE/ FAX	E-MAIL ADDRESS
ANTIGUA and BARBUDA			
Chief Air Traffic Services	Shenneth Phillips	1(268) 562 301/2 1(268) 764 3328	Shenneth.phillips@ab.gov.ag
Deputy Chief Air Traffic Services	Lorraine Davis	1(268) 562 5232 1(268) 728 0396	Lorraine.davis@ab.gov.ag
Air Traffic Services Operations Officer	Eugene Silcott	1(268) 562 5235 1(268) 764 3468 1(268) 779 3468	Eugene.silcott@ab.gov.ag
Acting Coordinator AIS/AIM	Natasha Mussington	1(268) 562 5231 1(268) 721 9423	Natasha.mussington@ab.gov.ag
Permanent secretary Ministry of Civil Aviation	Edson Joseph	1(268) 464 7508	Jedson84@gmail.com
Ag. CEO Antigua and Barbuda Airport Authority	Joseph Samuels	1(268) 484 2320	jj.samuel@abairportauthority.com
Director of Operations Antigua and Barbuda Airport Authority	Joseph Samuel	1(268) 484 2311 1(268) 736 0570	jj.samuel@abairportauthority.com
Director of Safety and Security Antigua and Barbuda Airport Authority	Avery Henry	1(268) 720 6266	ahenry@abairportauthority.com
Acting Director National Office of Disaster Services	Sherod James	1(268)562-1551 1(268) 464-8457	Sherod.james@ab.gov.ag Sods.anu@ab.gov.ag

Lead Commanding Officer Search and Rescue	Alando Michael	1(268) 462-5986 1(268) 764-1495	Alando.michael@abdf.gov.ag
TRINIDAD and TOBAGO			
Unit Chief Piarco ACC & APP Operations	Ashley Lalman	(W): +(868)669-4806 (Ext. 2562) (M): +(868)784-8456	alalman@caa.gov.tt
Acting Manager ATS & ANS Safety (TTCAA)	Ian Gomez	1 (868) 620 5969	igomez@caa.gov.tt
Executive Manager ANS (TTCAA)	Rohan Garib	1 (868) 689 4889	rgarib@caa.gov.tt
Director General of Civil Aviation (TTCAA)	Cary Price	1 (868) 792-5604	cprice@caa.gov.tt
Unit Chief ANS Safety	Ian Gomez	1 (868) 788 8284	igomez@caa.gov.tt
SAN JUAN – PUERTO RICO			
Operational Manager in Charge	William Freytes	1 (787) 253 8648	williamfreytes@faa.gov
En-route Supervisor	William Freytes	1(787) 253 8648	williamfreytes@faa.gov
ST MARTIN -JULIANA			
Manager – Air Traffic Services.	Gregory Hassell	Wk.: 1-721-546-7539 fax: 1-721-546-7550 Cell: 1-721-520-0795	ghassell@sxmairport.com
GUADELOUPE			
ANS Permanent Manager Guadeloupe		011 590 590 690 86 46 90	sna-ag-ptp-iao-ld@aviation-civile.gouv.fr

INMARSAT Guadeloupe		00870 76 212 35 64	
INMARSAT Martinique		00870 76 212 35 72	
ICAO NACC OFFICE MEXICO			
Regional Officer, ATM/SAR	Eddian Méndez	W: +52 55 5250 3211 M: +52 1 55 3643 9265	emendez@icao.int
IATA -Miami			
Assistant Director SFTY & Flight Ops- Brazil and The Americas Field Offices	Julio De Souza Pereira	Tel: +551121874211 Cell:	pereiraj@iata.org

APPENDIX E: VOLCANIC ASH CLOUD CONTINGENCY PLAN FOR V. C. Bird TMA

1. Introduction

1.1. The purpose of Air Traffic Management (ATM) Volcanic Ash Contingency Plan is to set out standardized guidelines and procedures for the provision of information to airlines and En-route aircraft before, during and after volcanic eruption. Volcanic contaminations, of which volcanic ash is the most serious, may be a hazard for flight operations; the issue cannot be resolved in isolation but through collaborative decision making (CDM) involving all entities concerned. During an eruption, volcanic contamination can reach and exceed the cruising altitudes of turbine-powered aircraft within minutes and spread over vast geographical areas within a few days. Encountering with volcanic ash may result in one or more of the following and associated problems:

a) The malfunction, or failure of engine(s) leading not only to reduction, or complete loss of thrust but also to failures of electrical, pneumatic and hydraulic systems;

b) Blockage of pilot and static sensors resulting in unreliable airspeed indications and erroneous warnings;

c) Partial or complete opaque rendering of windscreens;

d) Deposits of volcanic ash on a runway which degrades braking performance, most significantly if the ash is wet. In extreme cases this can lead to runway closure.

1.2. Volcanic ash can also affect the operation of aircraft at an aerodrome.

1.3. Ash deposited at aerodrome (s), even in very small amount, can result in closure of the aerodrome until all the ash has been removed. In extreme cases aerodrome(s) might no longer be available for use, resulting in loss of ATM infrastructure / system and economy

1.4. It should be noted that some aircraft types or engine technologies are more vulnerable to volcanic ash contaminants; any specific measures to be applied would therefore have to take into account these variances. Considering that an aircraft travels about 150 km (80 NM) in 10 minutes and that volcanic ash can rise to flight levels commonly used by turbine-engine aircraft in half that time, a timely response to reports of volcanic ash is essential.

1.5. It is imperative that information on the volcanic activity is disseminated as soon as possible. In order to assist staff in expediting the process of originating and issuing relevant AIS

and/or MET messages a series of steps is available for different stages of the volcanic activity at the International NOTAM office with volcano name, number and nominal position.

2. VOLCANIC EVENT

2.1. The response to a volcanic event that affects air traffic has been divided into four distinct phases (Pre-Eruption Phase, Start of Eruption Phase, Ongoing Eruption Phase, and Recovery Phase) as set out in Doc 9974. (Flight Safety and Volcanic Ash). The four phases cover an actual event only and do not describe ATM activities that need to be performed before or after a volcanic event.

2.2. Flight crews shall report observations of volcanic activity by means of a special air-report (Special AIREP).

2.3. Volcanic events information (both from the scientific community and pilots) shall be transferred without delay to the aeronautical meteorology station for subsequent action.

2.4. Phases of an event

2.4.1 Pre-eruption phase (when applicable):

The initial response, “raising the alert”, commences when a volcanic eruption is expected.

2.4.2 Start of eruption phase (when applicable):

The start of eruption phase commences at the outbreak of the volcanic eruption and entrance of volcanic ash into the atmosphere and mainly pertains to aircraft in flight.

2.4.3 Ongoing eruption phase:

The ongoing eruption phase commences with the issuance of the first volcanic ash advisory (VAA) after completion of reactive response.

2.4.4 Recovery phase:

The recovery phase commences with the issuance of the first Volcanic Ash Advisory (VAA) containing a statement that “NO VA EXP” (i.e. no volcanic ash expected”) which normally occurs when it is determined that no volcanic ash is expected in the atmosphere and the volcanic activity has reverted to its pre- eruption state.

3. PRE-ERUPTION PHASE

3.4 General

3.4.1 Where flight operations are planned in areas that are susceptible to volcanic eruptions, ATM may expect to receive from pilots the ICAO Volcanic Activity Report (VAR) form (published in the Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444) Appendix 1).

3.4.2 The focus of this phase is to gain early recognition of volcanic events. This phase is frequently characterized by a very limited availability of information on the potential extent and severity of the upcoming eruption.

3.4.3 The priority is to ensure the safety of aircraft in flight and there is therefore a requirement to promulgate information as a matter of urgency. Regardless of the extent of information available, the pre- eruption phase actions should be carried out for every expected eruption.

3.4.4 Initial awareness of the event can be by means of a Special AIREP/Volcanic Activity Report and/or meteorological or volcano logical agencies.

3.4.5 Air traffic management in collaboration with the meteorological office shall ensure that alerting information is provided expeditiously by the most appropriate means to ensure safety of flight.

3.4.6 Emphasis is placed on raising awareness of the hazard and to protect aircraft in flight.

3.4.7 Aircraft are expected to clear or avoid the affected area based on standard operating procedures.

3.4.8 Appropriate AIS and MET messages may be issued, and disseminated to affected aircraft in flight by the most expeditious means.

3.4.9 In the event that volcano erupts unexpectedly without any alert being raised the pre-eruption phase will be omitted.

3.5 The V. C Bird Approach Control Unit actions

3.5.1 In the event of significant pre-eruption volcanic activity, eruption of volcanic, or a

volcanic ash cloud being reported which could pose a hazard to aviation, the approach Unit on receiving such information, shall carry out the following:

a) Define an initial, precautionary Danger Area in accordance with established procedures. The size of the Danger Area shall be a circle with a radius of (15 NM) center on focal or estimated location of activity.

b) Alert flights already within the Danger Area by providing with all necessary information required to make safe and efficient decisions in dealing with the hazards in the defined area and offer assistance to enable them to exit the area in the most expeditious and appropriate manner.

c) Aircraft that are close to the Danger Area should be offered assistance to keep clear of the area.

d) Tactically re-clear flights which would penetrate the danger area onto routes that will keep them clear

e) Continue to provide normal services. It is the responsibility of the pilot-in-command to determine the safest course of action. V. C Bird Approach will not initiate a clearance through a danger area.

f) Inform the associated MET service in accordance with national and regional arrangements (unless the initial notification originated from either of these entities).

g) Immediately notify adjacent TMAs of the event and the location and dimensions of the danger area.

h) The Approach Control Unit should also negotiate any re- routings necessary for flights already coordinated but still within adjacent terminal control areas (TMAs) and flight information regions (FIRs) and provide any information on potential implications on traffic flow and its capability to handle the expected traffic.

i) It is also expected that adjacent TMAs/FIRs will be asked to reroute flights not yet coordinated to keep them clear of the danger area.

j) It should be noted that pilots may make the decision not to completely avoid the danger area based on e.g. visual observations.

k) Implement flow management measures if necessary to maintain the required level of safety.

l) Ensure that appropriate AIS messages are originated and disseminated.

m) The information must be as precise as is available regarding the activity of the volcano.

n) In addition to sending the relevant AIS messages to the normal distribution list, it will be sent to the relevant meteorological agencies.

3.6 Adjacent TMAs/FIRs Actions

3.6.3 Adjacent TMAs/FIRs should take the following action to assist:

a) When advised, re-clear flights to which services are being provided and which will be affected by the danger area.

b) Unless otherwise instructed, continue normal operations; and

c) if one or more routes are affected by the danger area, suggest re- routing(s) to the affected aircraft onto routes clear of the danger area; and

d) Maintain awareness of the affected area

4. START OF ERUPTION PHASE

4.1 General

4.1.1 This phase commences at the outbreak of volcanic eruption.

4.1.2 The focus of the processes in this phase is to protect aircraft in flight and on aerodromes from the hazards of the eruption; to collect relevant information; and to combine the information available into reliable information about the volcanic cloud.

4.1.3 In addition to relevant actions described under the pre-eruption phase, major activities of the start of eruption phase are: Issuance of relevant AIS and MET messages in accordance with relevant SLAs

4.1.4 Provision of information and assistance to airborne traffic.

4.1.5 As appropriate, danger areas will be notified via NOTAM. This phase will last until such time as the ongoing eruption phase can be activated.

4.2 V. C Bird Approach Control Unit Actions

4.2.1 The V. C Bird Approach Control Unit will inform flights about the existence, extent and forecast movement of volcanic ash and provide information useful for the safe and efficient conduct of flights.

4.2.2 If necessary, re-routing of traffic should commence immediately or may be in progress if the alerting time has been sufficient to facilitate activation of the pre-eruption phase. The Approach unit will assist in re-routing aircraft around the danger area as expeditiously as possible. Adjacent TMAs/FIRs are also expected to take the danger area into account and give similar assistance to aircraft as early as possible.

4.2.3 During the start of eruption phase, although ATC will not normally initiate a clearance through a danger area, it will inform aircraft about the hazard and will continue to provide normal services. It is expected that aircraft will attempt to remain clear of the danger area; however, it is the responsibility of the pilot-in-command to determine the safest course of action.

4.2.4 During the start of eruption phase the Approach control unit should:

a) Ensure that a NOTAM is originated to define the danger area. The area is delineated cautiously so as to encompass a volume of airspace in accordance with the limited information available. In determining the area, information on upper winds should be taken into account, if available.

The purpose is to ensure safety of flight in the absence of any prediction from a competent authority of the extent of contamination.

b) Maintain close liaison with MET service providers, who should issue appropriate MET messages.

c) Based on these forecasts and in collaboration with aircraft operators and the adjacent TMAs/FIRs using the CDM process, ATFM measures should be devised and updated when necessary to ensure safety of flight operations.

d) Ensure that reported differences between published information and observations (pilot reports, airborne measurements, etc.) are forwarded as soon as possible to the appropriate authorities to ensure its dissemination to all concerned.

e) Begin planning for the ongoing eruption phase in conjunction with the aircraft operators, the appropriate ATFM unit and TMAs/FIRs concerned.

f) Should significant reductions in intensity of volcanic activity take place during this phase and the airspace no longer is contaminated by volcanic ash, appropriate AIS messages should be issued. Otherwise, begin CDM planning for the ongoing eruption phase in conjunction with aircraft operators, the appropriate ATFM unit and the affected TMAs/FIRs.

4.2.5 Appropriate AIS and MET messages may be issued respectively, and a danger area may be declared by NOTAM. Normally, clearances will not be issued through the danger area unless explicitly requested by the flight crew.

4.3 Adjacent TMAs/FIRs actions

4.3.1 During the start of eruption phase adjacent TMAs/FIRs should take the following actions:

a) Maintain close liaison with the appropriate concerned unit and the originating TMAs/FIRs to design, implement and keep up to date ATFM measures which will enable aircraft to ensure safety of flight operations.

b) In the event that tactical measures additional to those issued by the appropriate ATFM unit are required, the adjacent TMA should, in collaboration with the originating TMAs/FIRs and aircraft operators, impose such measures.

c) Maintain plotting of the affected area.

d) Begin planning for the ongoing eruption phase in conjunction with the aircraft operators, the appropriate ATS unit and TMAs/FIRs concerned.

Note: During the start of eruption phase, depending on the impact of the volcanic ash, the appropriate ATS unit should organize the exchange of latest information on the developments with the associated VAACs, ANSPs, CMOs and operators concerned in order to support CDM.

5. ONGOING ERUPTION PHASE

5.1 The ongoing eruption phase commences with the issuance of the first complete VAA by the lead VAAC in accordance with. Note that volcanic ash advisory information in graphical format (VAG) may be issued by the VAAC, containing the same information as its text- based VAA equivalent.

5.2 The VAA/VAG should be used to:
a) Publish appropriate MET and AIS messages in accordance with MET and AIS SLAs; and
b) Plan and apply appropriate ATFM measures.

5.3 The volcanic contamination may affect any combination of airspace; therefore, it is impossible to prescribe measures to be taken for any particular situation nor is it possible to detail the actions to be taken by any particular TMAs/FIRs. The following guidance may prove useful during the ongoing eruption phase but should not be considered mandatory:

a) ACCs affected by the movement of the ash should ensure that appropriate AIS messages are originated in accordance with SLA-AIS. TMAs/FIRs s concerned should continue to publish details on measures taken to ensure dissemination to all concerned.

b) Depending on the impact of the volcanic ash, the appropriate unit may take the initiative to organize teleconferences to exchange latest information on the developments, in order to support CDM, with the VAACs, ANSPs, Met office and operators concerned.

c) The concerned ATS units should be aware that for the purpose of flight planning, operators could treat the horizontal and vertical limits of the contaminated area to be over-flown as they would mountainous terrain.

d) Any reported differences between published information and observations (pilot reports, airborne measurements, etc.) should be forwarded as soon as possible to the appropriate authorities.

e) Appropriate AIS and MET messages may be issued as appropriate in accordance with SLAs AIS and MET, respectively.

6. RECOVERY PHASE

6.1 The recovery phase commences with the issuance of the first VAA/VAG containing a statement that “NO VA EXP” (i.e. no volcanic ash expected”) which normally occurs when it is

determined that the volcanic activity has reverted to its non- erupting state and the airspace is no longer affected by volcanic ash contamination. Consequently, appropriate AIS messages should be issued in accordance with– AIS.

6.2 ATS units should revert to normal operations as soon as practical.

7. AIR TRAFFIC CONTROL PROCEDURES

7.1 If volcanic ash is reported or forecast in the V. C. Bird TMA, V. C. Bird Approach control unit will do the following procedures:

a) Relay all available information immediately to pilots whose aircraft could be affected to ensure that they are aware of the horizontal and vertical extent of the ash contamination;

b) if requested, suggest appropriate re-routing to assist flights to avoid areas of known or forecast ash contamination;

c) when appropriate, remind pilots that volcanic ash cannot be detected by ATC radar systems;

d) normally, ATC will not initiate a clearance through a danger area during the pre-eruption phase and the start of eruption phase; however, on the explicit request of a flight crew, a clearance could be provided. The existence of a danger area due to the presence of volcanic ash indicates the presence and extent of the hazard, hence ATC will inform aircraft about the hazard and will continue to provide normal services. It is then the responsibility of the pilot-in-command to determine the safest course of action in accordance with the operator's advice;

e) assistance to enable an aircraft to exit a danger area in the most expeditious and appropriate manner should be provided; and

f) If the V. C. Bird Approach Control has been advised by an aircraft that it has entered an area of ash contamination and indicates that a distress situation exists:

i) consider the aircraft to be in an emergency situation;

ii) do not initiate any climb clearances to turbine-powered aircraft until the aircraft has exited the area of ash contamination; and

iii) do not attempt to vectors aircraft without pilot concurrence.

g) Solicit pilot reports for the characteristics of the ash cloud including cloud base, top, layers and the presence of Sulphur.

h) Disseminate Special AIREPs in accordance with established procedures.

i) The recommended escape manoeuvre for an aircraft which has encountered volcanic ash is to reverse its course and begin a descent (if terrain permits). However, the final responsibility for this decision rests with the pilot

ANTICIPATED PILOT ISSUES WHEN ENCOUNTERING VOLCANIC ASH

1. ATCOs should be aware that flight crews will be immediately dealing with some or all of the following issues when they encounter volcanic ash:

a) Smoke or dust appearing in the cockpit which may prompt the flight crew to don oxygen masks (could interfere with the clarity of voice communications);

b) Acid smell similar to electrical smoke;

c) Multiple engine malfunctions, such as stalls, increasing exhaust gas temperature (EGT), torching, flameout, and thrust loss causing a failure to maintain assigned altitude/flight level;

d) On engine restart attempts, engines may accelerate to idle very slowly, especially at high altitudes (could result in inability to maintain altitude or Mach number);

e) At night, St. Elmo's fire/static discharges may be observed around the windshield, accompanied by a bright orange glow in the engine inlet(s);

f) Possible loss of forward visibility due to ash abrasion on cockpit windows. Windscreen may become cracked or dis-coloured and markedly reduce visibility for approach and landing. Visibility may be limited to that which is available through the side windows.

g) Sharp distinct shadows cast by landing lights as compared to the diffused shadows observed in clouds (this affects visual perception of objects outside the aircraft).

2. Simultaneously, ATC can expect pilots to be executing contingency procedures such as the following:

a) if possible, the flight crew may immediately reduce thrust to idle;

b) Exit volcanic ash cloud as quickly as possible. The shortest distance/time out of the ash may require an immediate, descending, 180-degree turn (terrain permitting);

c) Put flight crew oxygen masks on at 100 per cent (if required);

d) Monitor airspeed and pitch attitude. If unreliable airspeed is suspected, or a complete loss of airspeed indication occurs (volcanic ash may block the pitot system), the flight crew will establish the appropriate pitch attitude;

e) Land at the nearest suitable airport; and

f) On landing, reverses may be used as lightly as feasible.

APPENDIX F: PUBLIC HEALTH EMERGENCIES

AIR TRAFFIC SERVICES PROCEDURES FOR THE NOTIFICATION OF SUSPECTED COMMUNICABLE DISEASES OR OTHER PUBLIC HEALTH RISK ON BOARD AN AIRCRAFT.

1. OVERFLIGHTS

1.1 The flight crew of an en-route aircraft shall, upon identifying a suspected case (s) of communicable disease or other public health risk on board an aircraft, promptly notify V. C. Bird Control Tower.

The V. C. Bird Control Tower will obtain the following;

a) Aircraft identification;

b) Departure Aerodrome;

c) Destination Aerodrome;

d) Estimated time of Arrival;

e) Number of Persons on board;

f) Number of suspected case(s) on board; and

g) Nature of public health risk, if known.

1.2 The V. C. Bird Control Tower will communicate the above information to the Air traffic services unit at the departure and destination as well to the next TMA/FIR along route of the aircraft.

2. ARRIVALS

2.1 The Air Traffic Control Unit receiving the message will obtain the following information;

- Aircraft identification;
- Departure Aerodrome;
- Destination Aerodrome;
- Estimated time of Arrival;

- Number of Persons on board;
- Number of suspected case(s) on board; and
- Nature of public health risk, if known.

2.2 The Air Traffic Control Unit will forward the above information to the Chief Air Traffic Services, Director of Security, and Aircraft Operator.

2.3 Parking of the affected aircraft

The Tower Supervisor is expected to designate an isolated parking area for the affected aircraft taking into consideration of access to emergency vehicles, medical personnel and other general aircraft services.

2.4 Measures to be taken by the Air Navigation Service Provider (ANSP) in case of an international public health emergency

Whenever there is a pandemic crisis, the Antigua and Barbuda shall take all needed measures to prevent the contagion and spread of any virus.

Air traffic controllers may be exposed to the virus in specific situations, such as having close contact with someone infected or touching A TC console surfaces with which a person with the virus has interacted.

Everyone should therefore adopt a cautious behavior in accordance with health protocols, such as washing of hands several times a day, maintaining social distancing, disinfecting of work surfaces and equipment including microphones, among others.

APPENDIX G

Hurricane Contingency

Hurricane Watch 24-48 hours prior onset of Hurricane activity

• Meeting with all stakeholders CEO, DO, Security Chief, ECCAA CNS team, Met Office Airlines Immigration and Customs.

• liaise with the met Office updates

• place portable radios/satellite phone on charge

• confirm hurricane kit fully stocked. UTS

• notify the ATMD •

• ensure staff awareness of procedures

• liaise with Maintenance and Service

• check the tower complex for security and preparedness (e.g. windows, doors and secure loose objects where practical).

• review staff availability and requirements Hurricane Warning Initial declaration

• secure loose items in the tower where practical

• wrap tower documentation

• prepare tower equipment for wrapping.

• liaise with other areas as per Hurricane Watch

• contact tower staff and determine if assistance, shelter or transport is required, and determine whether they will shelter at home or at Airservices facilities.

• wrap the first aid kit and portable transceiver

• wrap and secure tower computer equipment

• secure bookcases, filing cabinets and document storage.

• arrange the taping of cab windows if appropriate

• arrange with ECCAA CNS team to cover the console, electrical equipment with waterproof sheeting

• relocate emergency equipment if required

• liaise with other ECCAA CNS team as to the timing shut down of navaids and tower.

• release all personnel

• confirm location of off duty staff

• brief all tower staff to check in after 'ALL CLEAR' is given Hazardous wind conditions (100km/h) has passed

• ensure the relevant NOTAM has been issued

• ensure warning signs are placed at the entry doors to the tower complex.

Tower closure

Tower When to close

Must be completed before four hours prior to the forecast onset of Inclement weather conditions.

“Having received the All Clear from the Met Office”

• As soon as practicable, contact the Chief Air Traffic Services and provide details of personal situation and availability for duty.

• obtain an assessment of damage to Airservices facilities

• coordinate return to service of facilities

• liaise with:

• Maintenance and Service

• Director of Operations ABAA

• account for all Airservices staff

• determine any assistance that staff may require

• liaise with the tower staff with respect to return to duty and recommencement of tower service

Resume ATS When it is determined that ATS can be re-established:

· establish the sequence and timing of service restoration

· check and confirm the readiness of all staff, facilities, and equipment

· coordinate and confirm arrangements with adjacent units

· implement reopening.

APPENDIX H

ATC Facility and/or Building Related Events

Hazard/Event Due to: Total or partial loss of ATC Facility

- Object collision
- Severe damage to building, e.g. fire
- Natural disaster, e.g. earthquake
- Severe weather conditions, e.g. hurricane
- Hostile action
- Unlawful interference, e.g. bomb threat
- Pollution, e.g. exterior fire smoke
- Chemical pollution e.g. noxious or poisonous fumes
- Power supply failure
- Public health emergencies, e.g. communicable diseases

Total or partial loss of ATC data communication Unserviceability of:

- Voice
- Network
- Telephone
- Meteorology

Degraded condition of ATC facility

- Fire and emergency personnel unavailable
- Fire and emergency equipment unavailable
- Fire and emergency personnel restricted from providing services

Total or partial loss of power supply Damage by:

- Water
- Fire
- o Earthquake
- Flood
- Lightning
- Equipment failure, e.g. wiring damage

ATC Related Occurrences

Hazard/Event Due to: Total or partial loss of the provision of ATS

- Loss of critical/essential equipment/systems
- Loss of Air Ground communication
- Closure or restrictions of airspace, airways, or aerodrome
- Special military operations
- Restricted, danger, or prohibited areas
- Emergencies or accidents
- Unlawful interference
- Radio communication failure
- Blocked runway
- Natural disaster
- Volcanic Ash Cloud
- Radioactive cloud
- Severe weather conditions

Human Resources

Hazard/Event Due to: Unsafe or inadequate staffing levels

- Multiple absences
- Accidents/emergencies
- Human Factors
- Illness

- Lack of competence