



Fifth Meeting of the Programmes and Projects Review Committee (PPRC/5)
 Mexico City, Mexico, 16 to 18 July 2019

Agenda Item 3: Global, Intra- and Inter-Regional Air Navigation Activities
3.3 Follow-up to the implementation of inter- and intra-regional activities

CONTINGENCY PLAN OF THE AIR TRAFFIC SERVICES OF CHILE

(Presented by Chile)

EXECUTIVE SUMMARY	
This information paper presents to the meeting the Contingency Plan for Air Traffic Services of Chile.	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> • Safety
<i>References:</i>	<ul style="list-style-type: none"> • Annex 6 — Operation of Aircraft • Annex 11 — Air Traffic Services • Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444) • Regional Project RLA / 06/901, Workshop / Meeting on ATS Contingency Plans of the SAM Region • Letter of Agreement between the National Geology and Mining Service and the General Directorate of Civil Aviation of Chile for ash emergencies and / or volcanic eruptions.

1. Introduction

1.1 According to the Disaster Readiness Program (DIPECHO) of the General Directorate of Humanitarian Aid of the European Commission, the geographical position and physical-natural characteristics make Chile's territory highly vulnerable to extreme natural events. Earthquakes, volcanic eruptions, droughts and intense and concentrated precipitations that trigger floods and landslides have defined both the landform and the character of the people who inhabit it.

1.2 Considering its magnitude and impact, the most important natural events in terms of victims and economic losses are:

- a) Earthquakes and tsunamis, and
- b) Hydrometeorological phenomena.

1.3 Taking into account the impact of volcanic ash in aviation and framed in the National Policy on Disaster Risk Management of the State of Chile, the General Directorate of Civil Aviation (DGAC) signed a Letter of Agreement with the National Geology and Mining Service (SERNAGEOMIN) for ash emergencies and / or volcanic eruptions in order to align ATS action procedures of the State of Chile with Doc. 9766-AN / 98 Handbook on the International Airways Volcano Watch (IAVW).

1.4 Considering the effects that these natural events could have on the aeronautical infrastructure, the State of Chile developed the ATS Contingency Plan, which is currently in force and harmonized with the adjacent States following the guidelines of the final report of the Workshop / Meeting on ATS Contingency Plans of the SAM Region (Lima, Peru, 19-23MAR.2018) of the Regional Project RLA / 06/901.

2. Brief description of the procedures

2.1. Vigilance of Volcanic Activity

2.1.1. The objective of the Letter of Agreement between the General Directorate of Civil Aviation and the National Geology and Mining Service for ash emergencies and / or volcanic eruptions is to establish specific directives for the adequate coordination, delimitation of functions and responsibilities among the ATS, Offices of Meteorological Surveillance (OVM) and Vulcanological Observatories in order to obtain specific information on the activity prior to a volcanic eruption, an ongoing volcanic eruption and the volcanic ash clouds required for air navigation.

2.1.2. Within the common responsibilities of the DGAC and the SERNAGEOMIN is to keep updated information of the participating actors involved in the letter, instruct, coordinate and monitor compliance with the agreement and keep the document aligned with the Volcanic Activity Surveillance Project in the International Airways (IAVW) facilitated by ICAO.

2.1.3. Chilean Meteorological Directorate (DMC), an integral part of the DGAC, is responsible for providing, through the Air Traffic Control Centres (ACC), updated and timely information about existing volcanic ash clouds and forecasts of the trajectories for the different flight levels to the pilots and to airlines operations centres based on the latest information received from the Vulcanological Observatory or the associated VAAC. DMC, through the OVMs, is responsible for issuing the Meteorological Alerts messages (SIGMET) on volcanic ash.

2.1.4. ACCs must issue ASHTAM through the NOTAM International Office (NOF) in accordance with Annex 15, giving details of the volcanic activity including the name, geographical coordinates of the volcano, date and time of the eruption, flight levels and affected routes and, if necessary, routes that must be closed for air traffic.

2.1.5. NOF will compile a separate message to be transmitted, via AFTN / AMHS, to the Volcanic Ash Advisory Centre (VAAC).

2.1.6. State Vulcanological Observatory will notify the VAAC, OVMs and ACCs about the activity prior to an eruption, volcanic eruption and volcanic ash clouds.

2.2. ATS Contingency Plan

2.2.1. The objective of the ATS Contingency Plan is to guarantee the safe, effective, continued and sustainable provision of air traffic service to civil aviation in the airspace under Chilean jurisdiction inside the Flight Information Regions (FIR) of Antofagasta, Santiago, Puerto Montt, Punta Arenas and Easter

Island in case of a temporary and unexpected situation that produces a degradation or a significant discontinuity in the services provided.

2.2.2. The ATS Contingency Plan of Chile does not intend to cover all the possible magnitudes of degradation in the ATS services, since these can be innumerable, however, in case of a degradation or a significant discontinuity of the ATS services in any of the FIR of Chile and / or when the contingency so demands, the ATS Chief or whoever subrogates him in the unit that will transfer traffic to an ACC affected by the interruption of the services, must coordinate with the ATM Contingency Unit or with the competent ATS authority of the DGAC, the implementation of additional measures not contemplated in this document.

2.2.3. Two levels of ATS contingencies are considered:

- i. Moderate ATS Contingency: Means that degradation in air navigation services still allows maintaining the use of Chile's ATS route network. Larger separations will be applied between aircraft entering the airspace affected by degradation of ATS services.
- ii. Severe ATS Contingency: Means that interruption and / or degradation in air navigation services do not allow to maintain the routine flow of flights in Chile's ATS route network. Greater separations will be applied between aircraft entering the airspace affected by degradation of ATS services and the simplified route network will be used.

2.2.4. ATM Contingency Unit authorized by the General Directorate of Civil Aviation of Chile (DGAC) to activate and execute this Plan and the respective coordination arrangements is:

Name of ATM Contingency Unit:	ATS SUB DEPARTMENT
Person of Contact:	
PRINCIPAL: ATS SUB DEPARTMENT CHIEF	Mr. Juan Carlos Rojas Pavez PHONE: +56 2 2290 4610 MOBILE: +56 9 8839 5869 EMAIL: jrojas@dgac.gob.cl
ALTERNATE: AIR TRAFFIC CONTROL SECCION CHIEF	Mr. Osvaldo Alvarado Oñate PHONE: +56 2 2290 4651 MOBILE: +56 9 5708 2678 EMAIL: ovalvarado@dgac.gob.cl

2.2.5. *Contingency Plan Activation*

2.2.5.1. Specific operational procedures for the FIR of Chile, in case of contingencies, will be activated by the Contingency Unit, through the publication of the specific NOTAM or any other available means. If the interruption of services is foreseeable, the NOTAM must be issued 48 hours in advance.

2.2.5.2. The NOTAM will specify:

- a) Affected FIR.
- b) Time, start date and expected duration of the contingency measures;
- c) Level of contingency (moderate or severe), as well as the corresponding mitigation measures;
- d) Facilities and / or services not available;
- e) Procedures to be followed by the adjacent ATS units;
- f) Procedures to be followed by the pilots who must keep standing by in the main frequency of the sector that is being flown, as well as air-to-air frequency 123.45 MHz;
- g) Any other detail related to the contingency that requires immediate knowledge of the users.

2.2.5.3. The Annexes to this Plan establish a simplified network of routes, entry / exit points and flight levels. ACC Supervisors involved can agree, depending on the level of degradation of the services and facilities, the flexibility of the limitations imposed.

2.2.5.4. In case of total interruption of the ATS services in Chile and / or when the contingency so demands, the Contingency Unit must coordinate with the ATS authority of the corresponding FIR, the implementation of additional measures not contemplated in this document.

2.2.6. *Deactivation of the plan*

2.2.6.1. This Plan will be deactivated by means of a cancellation NOTAM informing that the provision of ATS Services has been normalized.

2.2.7. *Affected Flight Information Regions*

2.2.7.1. The FIR directly affected by this Contingency Plan are:

- a) ARGENTINA: Córdoba, Mendoza, Ezeiza and Comodoro Rivadavia.
- b) BOLIVIA: La Paz.
- c) CHILE: Antofagasta, Santiago, Puerto Montt, Punta Arenas, Easter Island.
- d) PERU: Lima.
- e) NEW ZEALAND: New Zealand.
- f) TAHITI: Tahiti.

2.2.8. Provisions applicable to adjacent ATS units

2.2.8.1. Adjacent ACC must coordinate with the corresponding ACC of Chile, through the ATS coordination circuits and other available means, at least thirty (30) minutes before the estimated hours on the entry points of the FIR.

- 2.2.8.2. Adjacent ACC must send an estimated message (EST) to the FIR of Chile.
- 2.2.8.3. Adjacent ACC must authorize the entry of an aircraft into the FIR of Chile, using, as a minimum, a longitudinal separation of ten (10) minutes at the same point of transfer, regardless of the flight level.
- 2.2.8.4. For the above, in order to maintain a traffic flow according to the contingency, airways UL302 and UL780 will be considered as a single airway.
- 2.2.8.5. Depending on the speed difference, the time of flight in the contingency area and traffic conditions or intensity, the respective ACC Supervisors may, by mutual agreement, increase the minimum longitudinal separation to fifteen (15) minutes.
- 2.2.8.6. In addition, to promote operational safety, the ACC Supervisors of Chile can temporarily coordinate with adjacent ACCs specific measures or limitations and one or more airways or entry / exit points to FIR of Chile. If necessary, these specific limitations can be incorporated into NOTAM information.
- 2.2.8.7. If it is not possible to coordinate with the Chilean ACC, the adjacent ACC must instruct pilots who fly over the FIR of Chile to maintain the last level and speed accepted by the Chilean ACC.
- 2.2.8.8. Adjacent ACC must instruct the aircraft to establishing communication with the adjacent ATS units at least five (5) minutes before the expected time of entry into the FIR.
- 2.2.8.9. During the period of the contingency, RVSM not approved aircraft are not allowed into FIR of Chile, except for those of a humanitarian nature.
- 2.2.8.10. As far as possible during the contingency period, operations close to the FIR boundaries will be avoided. However, when this type of operations is essential, they must be coordinated with the corresponding ATC unit.
- 2.2.9 *Provisions applicable to aircraft*
- 2.2.9.1. Only IFR flight will be allowed.
- 2.2.9.2. Only RVSM approved aircraft may use flight levels between FL290 and FL410, both inclusive, adjusting to the limitations of the Tables. Exceptions are humanitarian flights that must be accommodated prior coordination.
- 2.2.9.3. On-route aircraft must maintain permanent listening and communicate on the frequency corresponding to the ACC sector and, if necessary, use the frequency of 123.45 MHz to coordinate with the other aircraft. Messages must contain:
- a) Identification of the aircraft;
 - b) Position;
 - c) Flight level; and
 - d) Any other relevant information.

- 2.2.9.4. Level changes will not be authorized within ten (10) minutes before the aircraft enters an adjacent FIR.
- 2.2.9.5. Aircrafts must keep navigation and anti-collision lights continuously lit while flying over FIR of Chile.
- 2.2.9.6. Aircrafts must keep the transponder activated the last code from which they have acknowledged receipt to an ATS unit, otherwise they will activate A2000.
- 2.2.9.7. Aircraft must be equipped with operational ACAS / TCAS and have RNAV navigation capability with navigation specification approval according to the route flown.
- 2.2.10. *Suspension of the Repetitive Flight Plans (RPL).*
- 2.2.10.1. While the contingency situation lasts, the RPL will be suspended.
- 2.2.11. *Auto transfer procedure*
- 2.2.11.1. When the ATS units cannot carry out traffic coordination due to a shortage in the AFTN Communications Fixed Service, the following self-transfer procedures must be applied:
- 2.2.11.2. ACC of origin:
- a) Inform the pilot of the unavailability of the Fixed Telecommunications Service with the accepting ACC; and
 - b) The necessary information and instructions for the pilot can be made available, get contact with the accepting ACC.
- 2.2.11.3. Pilot:
- a) Attempt to contact the accepting ACC, on the main or alternate frequency of the corresponding sector, at least five (5) minutes before the ETO at the point of transfer;
 - b) Inform the accepting ACC that is carrying out a self-transfer; and
 - c) Will transmit the following information:
 - 1. Identification of the aircraft,
 - 2. Departure aerodrome,
 - 3. Destination aerodrome,
 - 4. Route,
 - 5. Flight level,
 - 6. Transponder code,
 - 7. RVSM approval status,

8. PBN approval status:
9. Estimated Time Over at the point or intersection of self-transfer, and
10. Any other relevant information

ACCs should guide pilots regarding compliance with these procedures.

2.1.1. Coordination measures

2.1.1.1. The contingency arrangements indicated in this Plan are provisional and will be in force until services and facilities normally resume their activities.

2.1.1.2. This Plan will be reviewed, simulated and / or tested at regular intervals.

2.1.1.3. The amendments and revisions will be coordinated with the affected States, International Organizations and ICAO

2.1.2. Dissemination

2.1.2.1. The dissemination of this Plan will be carried out by the publication of corresponding aeronautical information.

3. Action

3.1. The meeting is invited to take note of the information presented.