



Agenda Item 4: Review of Implementation Processes in AIM Services

4.3 Guides for the implementation of the NOTAM Contingency Plan

(Presented by the Secretariat)

Summary

The purpose of this working paper is to present the meeting with a proposed guide for the implementation of the NOTAM Contingency Plan.

References:

- Report of the GREPECAS/12 meeting (Havana, Cuba, June 2004)
- Report of the GREPECAS/13 meeting (Santiago, Chile, November 2005)

1. Introduction

1.1 The GREPECAS/12 meeting agreed on the need for the States/Territories/International Organisations to develop “NOTAM Contingency Plans” to support Air Traffic Service Contingency Plans, thus ensuring the efficient exchange of NOTAM information at both national and international level.

1.2 Accordingly, it adopted Conclusion 12/99 - *Agreement on NOTAM Contingency Plans for the CAR/SAM Regions*, whereby CAR/SAM States/Territories/International Organisations were requested to develop their NOTAM contingency plans for flight information regions (FIRs), and, insofar as possible, to enter into bilateral and/or multilateral arrangements with those States/Territories and International Organisations responsible for neighbouring airspaces.

1.3 In turn, GREPECAS/13 took note of the NOTAM Contingency Plan submitted by Cuba pursuant to Conclusion 12/99 of GREPECAS/12. This Plan defined the action to be taken for reducing or eliminating the impact that both labour conflicts and natural disasters could have on the seamless provision of the NOTAM service, setting forth the administrative technical measures and the coordination and operational procedures required before, during, and after any contingency phase.

1.4 Consequently, the meeting formulated Conclusion 13/52 - *Guidance Material for NOTAM Contingency Plans* whereby, in addition to urging States to comply with Conclusion 12/99, they

were requested to consider the adoption of the NOTAM Contingency Plan of the Havana FIR, together with the experience of Cuba and COCESNA in the establishment of operational agreements on this subject matter, as guidance material.

2. Discussion

2.1 In view of the above, the Secretariat, based on the Contingency Plan of Cuba, has adjusted said text so that it may serve as general guidance to States/Territories/International Organisations in the drafting of their respective Contingency Plans (**Appendix A** to this working paper).

2.2 In this sense, it should be noted that the requirements for the implementation of PBN and computer-based navigation systems introduced the need for new AIS requirements to ensure the quality and timely distribution of information.

2.3 In order to provide information and meet these new requirements, the traditional function of aeronautical information services will become an information management service with changing obligations and responsibilities.

2.4 In order to facilitate coordination, improve efficiency and safety, and ensure that the various members of the ATM community have the same information for collaborative decision-making, it is essential to have real-time quality electronic information (aeronautical information on terrain and obstacles).

2.5 The electronic information will improve the en-route, terminal, and aerodrome situational awareness of pilots through the use of on-board equipment with geographical reference data containing information for the en-route, terminal, and aerodrome phases. The same information can be provided at different ATC positions and pre-flight planning units, and can be available to airline flight planning departments or users from general or private aviation.

2.6 Electronic information can be adapted and its format modified to meet the requirements of ATM users and their applications. Standard data formats will be used to create databases fed with data sets of assured quality.

2.7 The above clearly shows the need for CAR/SAM Regions to have the Contingency Plans of all the States/Territories/International Organisations and their respective bilateral or multilateral agreements to ensure the regular flow of NOTAM information contained in the various databases.

3. Suggested Action

3.1 The Meeting is invited to:

- a) take note of the information contained in this working paper;
- b) review and adopt the final text of the guide for the implementation of the NOTAM Contingency Plan, which appears in **Appendix A** to this working paper, so that it can be used by CAR/SAM States/Territories/International Organisations.

**Model for drafting the NOTAM
Contingency Plan**

Introduction

This NOTAM Contingency Plan has been prepared in keeping with GREPECAS **CONCLUSION 12/99** “Agreement on NOTAM Contingency Plans for the CAR/SAM Regions” for application in the FIR.

The objective of this NOTAM Contingency Plan is to define the arrangements and coordination required to establish technical and administrative measures for the coordination and operating procedures that will ensure the provision of the NOTAM service and its distribution in case of interruption of AIS and related support services.

The Plan takes into account all possible forms of backup, including agreements with the Aeronautical Information Central Office of ..., specifying, in each case, the steps to follow, based on the actions established in this Plan.

Contingency Plan - NOTAM

Backup Procedures in Case of Contingencies

1. General Principles

1.1 The purpose of this document is to define backup procedures and measures to be adopted in case of contingencies in the International NOTAM Office (NOF) that prevent the fulfilment of all or any of its functions.

2. Definitions

2.1 An “*Eventuality*” is the one caused by an unforeseen or planned situation that results in a contingency at the NOF.

2.2 A “*Contingency at the NOF*” is one which precludes the fulfilment of all or any of the functions for which it was created and thus requires the implementation of the procedures described in this Contingency Plan to ensure the publication, reception, and maintenance of NOTAM information at the FIR, in support of ATM activities.

3. Classification of eventualities and contingencies

3.1 The eventualities contemplated in this Contingency Plan, as well as the possible consequences of the different types of contingencies at the AIS Central Office, include:

Eventuality	Resulting situation	Contingency
1- Minor failure in the NOTAM DB hardware or software.	1- NOTAM DB inoperative, but the AFTN messaging system is operative.	Type A
2- Communications failure throughout the network or failure of the AFTN messaging server.	2- The NOTAM DB may be operative or not, but it is impossible to transmit and receive through the AFTN.	Type B
3- Failure of the regional communication network (MEVA – REDDIG, etc.)	3- Impossibility to transmit and receive through the AFTN.	Type B

3.2 Contingencies at the Central Office are classified as follows:

Type A: The NOTAM DB is inoperative, but its functions will be performed *manually* by NOTAM technicians and relayed through the AFTN messaging system.

Type B: The NOTAM DB may or may not be operative, but the messaging system is not, and thus the NOTAM Office cannot disseminate or receive NOTAM information at national and international level, making it necessary to use another backup central office in the area to maintain the NOTAM information service. Natural and other disasters are also included in this classification.

3.3 Warning Plan

3.3.1 When the NOTAM Office identifies a failure that could generate a contingency resulting from a Type A or B eventuality described in paragraph 3.1, it immediately notifies the....(*responsible technical department*). If the NOTAM contingency is confirmed, the....(*responsible technical department*) will provide information about it, such as:

- Type of contingency, according to the table contained in item 3.1 of this Contingency Plan.
- Estimated duration of the contingency.

3.3.2 The NOTAM technician will immediately inform the head of the NOTAM Office, who will officially declare the NOTAM state of contingency, activating the following Warning Plan, in the established order of priority, always stating the type of contingency being declared:

Warning Plan:

1.
2.
3.
4.

3.4 Contingency Infrastructure

3.4.1 The minimum conditions required shall be in place or shall be immediately created in the NOTAM Central Office for the performance of all the automated functions that are normally carried

out by the NOTAM DB, and which are essential to ensure the safety and regularity of air navigation in the FIR. These conditions are:

- a) Internet access at the NOTAM Central Office and an international e-mail account.
- b) (For example, two) PCs will be provided, in addition to the existing ones, to ensure the uninterrupted work of.... technicians preparing and distributing NOTAM and PIB information, as defined in advance.
- c) A hot-line telephone/fax will be installed to ensure continuous and prompt communications at national and international level, as defined in advance.
- d) ... AIS technicians from the unit will be assigned to support the drafting of PIBs at the NOTAM Office, as long as the contingency lasts.
- e) National users that shall have e-mail accounts to be kept informed while the NOTAM contingency lasts will be defined on a timely basis.

3.5 Means of communication

3.5.1 During the contingency, communications will be established by telephone, e-mail or the AFTN, as specified in each case.

3.5.2 The data to be transmitted will be previously defined and updated in an attachment to the Letter of Operational Agreement between the and International NOTAM Offices. This letter will include the information about the two NOFs, as well as the AFTN addresses of all international users of the NOTAMs in the... FIR.

3.5.3 An attachment to this Plan will contain updated information on telephone numbers, e-mail and AFTN addresses of all national units involved in the contingency.

3.6 Organisation of the Contingency

3.6.1 The Head of the NOTAM Central Office will manage the NOTAM contingency in..... , providing all the relevant instructions to face any type of contingency, such as:

- a) to double or triple the staff in the shift in order to face the contingency, preparing a “contingency work schedule” extending at least one week after the estimated date of conclusion of the contingency.
- b) to keep in close contact with(*the corresponding aeronautical authority and the corresponding Operational Control Department*), adopting, inasmuch as possible, the decisions previously coordinated with them.
- c) to keep in close contact with the..... (Department/organisation responsible for communications and the technical area), keeping abreast of the technical conditions during the contingency.

3.7 NOTAM Publication Requests

3.7.1 Aerodrome AIS units, together with ...(*responsible for air navigation services, ATC units involved*), the AIS Publications Office, and other aeronautical users authorised to request the publication of a NOTAM, will send the NOTAM publication requests to the NOTAM Office, in keeping with the requirements described in ... (*established regulations*), through the AFTN (Type A contingency) or e-mail or telephone (Type B contingency).

3.8 PIB Drafting Requests

3.8.1 Once a NOTAM contingency of any type has been decreed, aerodrome AIS units will not be able to draft their own PIBs as they normally do, and thus must request the NOTAM Office to do it:

- Type A contingencies: delivery of FPLs through the AFTN as soon as they are received at the aerodrome AIS unit.
- Type B contingencies: delivery of FPLs as soon as they are received at the unit by e-mail or telephone/fax or any other means available and accepted by the aeronautical authority, in which case all the data contained in the FPL shall be included.

4. Applicable Procedures in case of a Type A Contingency

4.1 Publication of the warning NOTAM

4.1.1 Once the Type A contingency has been decreed, the Head of the NOTAM Central Office will instruct the AIS officer when and how to publish the first NOTAM announcing the status of the contingency to the NOTAM users of theFIR, as shown in the following example:

(AXXXX/YY* NOTAMN
Q)MUFH/QXXCA/IV/NBO/AE/000/999
A)MUFH B)*date/time beginning contingency* C)*EST date/time end contingency*.
E)NOTAM CONTINGENCY ACT DUE TECHNICAL REASONS. THE INFORMATION
NOTAM OF HAVANA BY THE INTERROGATION SERVICE WILL BE INTERRUPTED)

* (*XXXX corresponding sequential numbering, YY year*)

4.2 NOTAM

4.2.1 The NOTAM Office will receive NOTAM publication requests through any of the means specified in the established technical and quality documentation, based on the applicable national AIS regulation, verifying and manually drafting the requested NOTAMs and, finally, transmitting them through the AFTN to all the corresponding national and international NOTAM users.

4.3 Drafting of PIBs

4.3.1 The NOTAM Office will draft the PIBs requested by the aerodrome AIS units while the contingency lasts, and will send them by e-mail at least 2 hours before the estimated time of departure of each flight.

5. Procedures Applicable in case of a Type B Contingency

5.1 Coordination between the AIS Central Offices of and (*cite the central offices established in the contingency agreement*).

5.1.1 Once the Type B contingency has been decreed, the Head of the NOTAM Office will immediately contact the specialist designated as Head of the NOTAM contingency by.... (*the corresponding aeronautical authority*).

5.1.2 The..... (*aeronautical authority*) of...(State) will request... (*the aeronautical authority with which it has signed the contingency agreement*) of...(State), in writing, to activate the procedures described in the Letter of Agreement signed by both entities, and will send copy of such communication to the NOTAM Office. Once copy of the letter has been received, the Head of the NOTAM Office will get in contact, by phone, with the International NOTAM Office of ... (State) and coordinate all the items required to implement the backup procedures with the.... Central Office through the International NOTAM Office of..... (State), in keeping with the Letter of Operational Agreement.

5.2 Publication of NOTAMs

5.2.1 During a Type B contingency, all NOTAMs that need to be published in the... FIR will be issued and distributed.... by the International NOTAM Office of.... (*in keeping with the Letter of Agreement*).

5.2.2 All NOTAMs requested for publication will be fully drafted by the International NOTAM Office of... (*according to the Letter of Agreement*), from the beginning until the end of the contingency, assigning sequential numbers to the NOTAMs of the AIS unit affected by the contingency, and they will be sent by fax or e-mail to the International NOTAM Office of...(according to the Letter of Agreement), leaving written record of the request.

5.2.3 After the NOTAM is published, it will be checked against what was requested, and if not exactly in agreement, its replacement or cancellation will be requested, as appropriate.

5.2.4 Before publishing a NOTAM, a first fax or e-mail will be sent to the International NOTAM Office of.... (*according to the Letter of Agreement*) with an updated list of international AFTN addresses where the NOTAMs requested for publication by the NOF (*according to the Letter of Agreement*) shall be sent. The list of AFTN addresses of the international users of the NOTAM information of the.... FIR will be contained in an attachment to the Letter of Operational Agreement between the two NOFs.

5.2.5 The Head of the NOTAM Office will tell the AIS official when and how must the first NOTAM announcing the condition of a Type B contingency to the users be published, as shown in the following example:

(A)XXXX/YY* NOTAMN
Q)MUFH/QXXCA/IV/NBO/AE/000/999
A)MUFH B)date/time of start of the C contingency)date/ EST time of end of contingency.
E)NOTAM CONTINGENCY ACT. THE INFORMATION NOTAM OF HAVANA AIS OFFICE BY THE INTERROGATION SERVICE WILL BE INTERRUPTED. INFO NOTAM OF HAVANA FIR WILL BE PROVIDED BY COCESNA AIS OFFICE).

* (XXXX corresponding sequential numbering, YY year)

5.3 Distribution of NOTAMs to Domestic Users

5.3.1 The NOTAMs of the...FIR published by the International NOTAM Office of... (*according to the Letter of Agreement*) will be circulated to the international users of said NOF. Once the NOTAMs of the ...FIR have been received by the International NOTAM Office of... (*according to the Letter of Agreement*) and have been duly reviewed, the NOTAM Officer will circulate it to national users through e-mail.

5.4 Drafting of PIBs

5.4.1 The NOTAM Office will draft the PIBs requested by the aerodrome AIS units while the contingency lasts and will send them by e-mail or fax at least 2 hours before the estimated time of departure of each flight.

6. End of the Contingency and Resumption of Functions

6.1 End of the Contingency

6.1.1 Once the end of the contingency has been confirmed, the one responsible for the contingency in the affected NOTAM Office will check the operation all and each of the functions of the NOTAM data bank, as well as the AFTN messaging system, and only then will the end of the NOTAM contingency be officially announced.

6.1.2 The Head of the NOTAM Office will give instructions to publish a NOTAM indicating the end of the NOTAM contingency.

6.1.3 In Type A contingencies:

6.1.3.1 When indicated by the Head of the NOTAM Office, the AIS Central Office of... will publish the NOTAM announcing the end of the contingency, as shown in the following example:

(A)XXXX/YY* NOTAMC AXXXX/YY*
Q)MUFH/QXXAK/////

A)MUFH B)date/time the contingency ends
E) END NOTAM CONTINGENCY HAVANA AIS OFFICE OPR NML)

* (XXXX corresponding sequential numbering, YY year)

6.1.4 In Type B contingencies:

6.1.4.1 The Head of the NOTAM Office will immediately advise... (*corresponding aeronautical authority*) about the end of the NOTAM contingency, and will arrange, as soon as possible, for the delivery of the relevant communication to the aeronautical authority of... (*State with which the Letter of Agreement has been signed*) informing about the end of the contingency. The message must specify that the official closing of the contingency will be on the date and time of the cancellation NOTAM to be issued to that end.

6.1.4.2 (*corresponding aeronautical authority*) will inform the Head of the NOTAM Office, through any possible means, about the letter sent to the aeronautical authority of... (*State with which the letter of agreement has been signed*) announcing the end of the contingency, and, only then, the Head of the NOTAM Office will give the instructions for the publication of the cancellation NOTAM by the AIS Central Office of...., as shown in the following example:

(A)XXXX/YY* NOTAMC AXXXX/YY*
Q)MUFH/QXXXX/////

A)MUFH B)*date/time of end of contingency*
E) END NOTAM CONTINGENCY HAVANA AIS OFFICE OPR NML)

6.2 Resumption of Functions

6.2.1 Once this NOTAM has been issued, the Head of the NOTAM Office will:

- a) take all the relevant measures to restore the conditions and the normal work at the office
- b) update the NOTAM DB and check the continuity of serial numbers; and
- c) determine the gradual return of the support personnel to their respective work positions.

6.2.2 ...(*Technical department*) will restore the equipment and media normally found in the Office, gradually withdrawing the support PCs, as agreed with the Head of the NOTAM Office, while the telephone/fax will be kept permanently.

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