



International Civil Aviation Organization

**The Sixth Meeting of the APANPIRG ATM Sub-Group
(ATM/SG/6)**

Hong Kong, China, 30 July – 03 August 2018

Agenda Item 5: ATM Coordination (Meetings, Route Development, Contingency Planning)

BALLISTIC LAUNCH AIRSPACE CLOSURES - UPDATE

(Presented by IATA)

SUMMARY

This paper presents an update on issues associated with ballistic launch/re-entry events and proposed regional procedures to improve the management of such events particularly involving multiple FIRs

1. INTRODUCTION

1.1 IATA has raised problems associated with Ballistic Launch and re-entry in the past and suggested guidelines to improve co-ordination among stake holders which were endorsed by ATMSG/3 and guidance was to be developed and included in the Asia Pacific Seamless ATM plan.

1.2 From the Seamless Plan:

5.68 *Launch/Space re-entry activity management: the efficient management of rocket/missile launch and space re-entry activity to minimize disruption to other airspace users. The coordination of all the stakeholders will be enhanced by: coordination agreements between the State civil aviation authority, the ANSP, and the launch/re-entry agency concerned; strategic coordination conducted between the State civil aviation authority prior the activity and tactical management of the launch/re-entry activity. And:*

7.60 *All States with Agencies that conduct ballistic launch or space re-entry activities should ensure:*

a) the development of written coordination agreements between the State civil aviation authority and the launch/re-entry agency concerned;

b) that strategic coordination is conducted between the State civil aviation authority and any States affected by the launch/re-entry activity at least 14 days prior to the proposed activity, providing notice of at least:

i) three days for the defined launch window; and

ii) 24 hours for the actual planned launch timing;

c) that consideration of affected airspace users and ANSPs is made after consultation, so that the size of the airspace affected is minimized and the launch window is optimized for the least possible disruption to other users; and

d) that communication is established with affected ANSPs to provide accurate and timely information on the launch/re-entry activity to manage tactical responses (for example, emergencies and activity completion).

1.3 This paper highlights the need for further effort in managing rocket launch activities to ensure minimum disruption to 'normal' operations.

2. DISCUSSION

2.1 In general terms IATA was still experiencing less than optimal management of ballistic events – for example:

- launch completed within first 30 minutes of the airspace closure, but the airspace remained closed for the full (NOTAMed) duration;
- not all affected FIRs take timely NOTAM/NOTAMC action creating confusion among airspace users; and
- actual launch does not take place, but the airspace remained closed for NOTAMed duration.

2.2 Using a recent example of airspace closure involving multiple FIRs the need for more detailed regional procedures and the need for States to be vigilant and proactive in managing these events is highlighted.

RECENT CASE:

- The "Launch State" (FIR A) pre coordinated the Launch with affected FIRs/ANSPs (B and C) and issued NOTAM which identified Launch windows over a two-day period for four hours per day ✓
- On completion of the Launch the Launch State issued a NOTAMC – which was also followed by email notification giving the 'all clear'. ✓
- FIR B cancels NOTAM ✓
- Unfortunately, the email notification was not sent to all affected FIRs. ✗
- FIR 'C' only takes action on receipt of email notification from the Launch State - the Supervisory function responsible does not directly receive NOTAMs and therefore did not see the NOTAMC when it was issued. ✗
- Launch State sends delayed email notification to FIR 'C' - this resulted in a 12 hour delay in cancelling the remaining closure with the consequent impact on airlines schedules, the travelling public and direct costs borne by airlines ✗

2.3 The process breakdown and other issues have been discussed with the States concerned and will be rectified but this event does show the need for agreed processes and proactive vigilance by ALL states affected by Ballistic activities.

2.4 When you have large areas of your airspace shut down due to an activity managed by another state it should be incumbent on any state affected to have heightened monitoring of the

situation and take proactive actions to ensure awareness of up to date situation indicators; such as NOTAMC; to minimize the impact on customers.

Recommendations

2.5 To reinforce the wording in the Seamless Plan and further encourage harmonized management of events, more detailed Draft guidance is proposed for the region together with a Draft “planning checklist”. The guidance covers the following:

- Collaborative Launch Planning: Why? - Temporary Danger Areas are created by launch states over high seas airspace across different FIRs often without any formal Pre-consultation with affected ANSPs or with the users of that airspace. Liaison with affected airspace Users is required to minimize operational impact
- Robust Launch Co-ordination: Why? - There is need for agreed processes and proactive vigilance between all stakeholders affected by Ballistic activities. Standardised process along with ‘agreed’ means of co-ordination and pro-active actions to ensure up to date situational awareness need to be established/identified between:
 - Space/Mil authorities conducting the launch and the ANSP of that state,
 - ANSP of launch state and ANSPs of affected FIR/s,
 - ANSPs and airspace Users (Airlines) of the affected airspace.
- Launch Performance Monitoring: Why? - If you can't measure it, you can't improve it! Each launch ANSP should monitor the airspace non- availability to gauge performance of each launch.

2.6 Appendix A and B propose more detailed guidance for the collaborative management of ballistic launch/reentry events and a “Planning Checklist”

2.7 A Draft Conclusion is proposed for consideration by ATMSG/6 as follows:

Draft Conclusion ATM/SG/6-X: Adopt Regional Procedures for Ballistic Launch/Space Ren-entry Management			
What: Adoption of Regional guidance and planning check list for management of ballistic launch/re-entry events (contained in Appendix A and B)		Expected impact: ☐ Political / Global ☐ Inter-regional ☒ Economic ☒ Environmental ☒ Ops/Technical	
Why: To reduce impact of airspace closures on Aviation activities in Asia Pacific		Follow-up:	☒ Required from States
When:		Status:	Draft to be adopted by Subgroup
Who: ☐ Sub groups ☒ APAC States ☒ ICAO APAC RO ☐ ICAO HQ ☐ Other:			

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information contained in this paper; and

- b) Discuss the proposed guidance material and planning check list.
- c) Discuss and agree to the draft conclusion below

APPENDIX A: Proposed guidance for Collaborative procedures to improve the management and minimise the impact of, airspace closures due to ballistic launch/re-entry events:

A.1 Launch Facilities:

- Generally ballistic launches take place from pre defined locations. This should enable analysis and pre planning of contingency options that can be activated when a launch is notified
- Launch locations (whether mobile or static) should be positioned to away from busy air traffic areas.

A.2 Pre Launch Planning:

- Launch details should published at least **two working weeks'** notice; if possible, and include
 - Extent and coordinates of proposed danger Zone
 - Ensure planning and notification is in place for any re-entry/debris possibility
 - Tentative launch window (timing and dates)

To all affected FIRs and respective ICAO regional office.

- Ideally the Launch State should have at least one conference call with affected FIR operational management to:
 - discuss impact and options for alternative dates/times that minimise operational impact
 - identify contingency routing if possible
 - coordinate NOTAM action
 - Discuss any possible re-entry issues and impact
 - Liaison with affected airspace Users
 - Notify and agree process for actual activation and cancellation of any restrictions

A.3 Tactical Launch Co-ordination process:

- Actual Launch “Window” published with ideally **three days' notice**; but not less than 24hrs
- Launch State to ensure ongoing collaborative information sharing with points of contact in affected FIRs:
 - Real Activation Time Window: As the countdown begins / at least four hours prior;
 - Facilitating launch with minimal impact on civil air traffic: Launch authorities to clearly convey estimated normalcy time e.g. flights beyond XX:XX (time in UTC) can expect normal routings, but can be advised to carry fuel for the alternate routings (to be on safer side),
 - Notify Lift off: As soon as the Rocket gets airborne and
 - Notify End of activity through NOTAMC: coordinate and ensure immediate withdrawal of NOTAMs by all affected FIRs

A.4 Launch Cancellations:

- Cancellations of launch at any point of time needs to be disseminated as soon as possible to all affected FIRs.
- Ongoing information sharing should take place until the ‘all clear’ is given.

APPENDIX B:

Rocket Launch/Space re-entry activity management Planning Check list

- Launch required by:
- Proposed Temporary Danger Area:
- Proposed launch Reservation window:
- Date: DD/MM/YYYY to DD/MM/YYYY Time: XX: XX to YY:YY UTC
- Proposed Definitive launch window:
- Date: DD/MM/YYYY to DD/MM/YYYY Time: XX: XX to YY:YY UTC
- Expected exact date of launch:

<i>Affected FIR</i>	<i>Affected AWYs</i>	<i>Affected Flights in requested Time window</i>	<i>Option 1: Suggested revised time and date</i>	<i>Option 1: Affected flights in revised time and date</i>	<i>Option 2: Suggested revised time and date</i>	<i>Option 2: Affected flights in revised time and date</i>

Pre Launch Conference Call agenda:

- Notify latest Launch details and logistics
- Identify contingency routing:
- Identify SUA, FUA options to improve ATM during launch:
- Coordinate NOTAM action among all affected FIRs:
- Discuss any possible re-entry issues and impact:
- Notify process for actual activation and cancellation of any restrictions:
(AFTN/NOTAM/NOTAMC/email, Telephone Call),
- Any other business

Identify Points of Contact (POC) for airspace reservation co-ordination,

Affected FIR	POC (Name, Designation)	Tel , Mob, AFTN	Email