



International Civil Aviation Organization

**The Fourth Meeting of the Air Traffic Flow Management Task Force
(ATFM/TF/4) and BOBCAT Workshop**

Bangkok, Thailand, 7 to 11 November 2005

Agenda Item 6: Operational Trial Arrangements

**ALTERNATIVE SOLUTION FOR
AIRCRAFT MISSING BOBCAT WHEELS UP TIME PLUS BUFFER**

(Presented by Thailand)

SUMMARY

The purpose of this working paper is to explore possible solutions in the case where an aircraft misses his Wheels Up Time plus buffer.

1. INTRODUCTION

1.1 The meeting is invited to recall that, throughout the last few ATFM/TF meetings, there have been long, yet inconclusive discussions regarding likely alternatives when an aircraft's Wheels Up Time plus buffer has been missed by a short period of time.

2. DISCUSSION

Missed Wheels Up Time

2.1 There will be circumstances where an aircraft has not met his WUT plus buffer by a short time period due to various reasons, and would require a new slot allocation from the ATFMU. Rather than this action being taken, there may be another alternative for the aircraft to allow departure outside the nominated WUBT, if this delay can be managed.

2.2 A simple example with aircraft departing from two locations will be used to demonstrate the alternative solution. No matter which WUBT configuration is used, this alternative solution would still apply. Take a situation where the WUBT has been agreed to as 5 minutes (+5 minutes WUBT).

2.3 Let aircraft 1 (AC1) be an aircraft departing from Kuala Lumpur and aircraft 2 (AC2) be an aircraft departing from Bangkok with the following slot allocation from BOBCAT:

Table 1: BOBCAT Slot Allocation for AC1

Waypoint	Flight Level	Allocated ETO
IKULA	320	17:41
DI	310	21:45

Table 2: BOBCAT Slot Allocation for AC2

Waypoint	Flight Level	Allocated ETO
LIMLA	320	18:15
DI	310	22:00

2.4
as follows:

The interpretation of AC1's slot allocation and AC2's slot allocation from para. 2.3 is

Table 3: BOBCAT Slot Allocation Interpretation for AC1

Waypoint	Flight Level	Allocated ETO	Earliest ETO	Latest ETO
IKULA	320	17:41	17:41	17:46
DI	310	21:45	21:45	21:50

Table 4: BOBCAT Slot Allocation Interpretation for AC2

Waypoint	Flight Level	Allocated ETO	Earliest ETO	Latest ETO
LIMLA	320	18:15	18:15	18:20
DI	310	22:00	22:00	22:05

2.5
Planned aircraft spacing at waypoint DI is as follows:

Table 5: BOBCAT Planned Aircraft Spacing at Waypoint DI

Callsign	Waypoint	Flight Level	Allocated ETO
AC1	DI	310	21:45
AC2	DI	310	22:00

2.6
The meeting is invited to note that if AC1 departs 5 minutes late and AC2 departs on time, spacing at DI would still be 10 minutes, meeting the requirement.

Management of Delay in Excess of WUBT

2.7
Suppose that AC1 cannot make his 5 minutes WUBT, but has advised that he would be able to and requested to depart 3 minutes later than WUBT. In this case, it is considered that this delay can be managed under the following example. AC1's actual waypoint ETO are:

Table 6: Actual ETO for AC1

Waypoint	Flight Level	Allocated ETO	Earliest ETO	Latest ETO	Actual ETO
IKULA	320	17:41	17:41	17:46	17:49
DI	310	21:45	21:45	21:50	21:53

2.8 In this case, you will note the following ETO's at waypoint DI:

Table 7: Aircraft ETO at Waypoint DI

Callsign	Waypoint	Flight Level	Allocated ETO	Earliest ETO	Latest ETO	Actual ETO
AC1	DI	310	21:45	21:45	21:50	21:53
AC2	DI	310	22:00	22:00	22:05	

2.9 The meeting is invited to note that from the interpretation of AC2's slot allocation in Table 4 above, it can be seen that AC2 will have ETO range at waypoint DI between 22:00 and 22:05. It can be observed that in order to fix spacing at DI given that AC1 departs 3 minutes later than WUBT, AC2 has to get to DI after 22:03, or between 3 and 5 minutes late from his allocated ETO.

2.10 If the ANSP responsible for AC1's departure allows AC1 to depart 3 minutes outside original WUBT so that he will get to waypoint DI at 21:53, it is also the responsibility of the ANSP where AC1 departs from to coordinate and seek agreement with the ANSP where AC2 departs from so as ensure that AC2 departs from his location no earlier than WUT plus 3 minutes (within the WUBT).

Possibility of Late Departure Beyond WUBT Arrangements

2.11 The meeting is invited to note that it is possible, but not guaranteed, for an aircraft to depart up to the 3 minute after WUBT allocated has passed for in this particular scenario. This will depend on where the aircraft is departing, position of other aircraft already airborne, and time reference WUBT that they get airborne. This action would require tactical coordination between ANSP's. An operational agreement would need to be reached between all relevant parties before this procedure is introduced.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Realize possibility of aircraft departing late beyond arranged WUBT;
- b) Agree that further study may need to be pursued to allow aircraft departure beyond arranged WUBT; and,
- c) Subject to positive results of that study, Operational Agreements would be required between states concerned.

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