



**WORKING PAPER**

**THIRTEENTH AIR NAVIGATION CONFERENCE**

**Montréal, Canada, 9 to 19 October 2018**

**COMMITTEE A**

**Agenda Item 2: Enabling the global air navigation system**

**2.1: Aerodrome operations and capacity**

**REDUCED RUNWAY SEPARATION MINIMA (RRSM) – H24**

(Presented by the United Arab Emirates)

**EXECUTIVE SUMMARY**

This paper presents a proposal to amend the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444), 7.11 REDUCED RUNWAY SEPARATION MINIMA BETWEEN AIRCRAFT USING THE SAME RUNWAY to incorporate the provision of reduced runway separation minima (RRSM) outside the hours of daylight (30 minutes after local sunrise to 30 minutes before local sunset).

**Action:** The Conference is invited to agree to the recommendation in paragraph 3.1

**1. INTRODUCTION**

1.1 The *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) contains no procedure or guidance for implementing an application to provide reduced runway separation minima (RRSM) between aircraft using the same runway outside the hours of daylight.

1.2 The nature of the traffic patterns in the Middle East (MID) is that 47 per cent of aircraft movements occur during the hours of darkness. As a capacity enhancement initiative, the United Arab Emirates considered the expansion of RRSM on a 24-hour basis subject to robust safety assessments. Both Abu Dhabi International Airport (OMAA/AUH) and Dubai International Airport (OMDB/DXB) have been granted approval for an operational trial by the United Arab Emirates General Civil Aviation Authority (GCAA) following the completion of a comprehensive safety assessment, which included hazard identification, risk assessment and mitigation as well as stakeholder consultation.

1.3 Following a trial period of nine months without any significant safety or operational concerns, both aerodromes have been granted an operational approval for RRSM H24 on permanent basis.

1.4 The GCAA's decision to grant a permanent approval for RRSM H24 at OMAA and OMDB was based on the successful application of the trial period, monthly stakeholder review meetings,

data information obtained, analysis of statistical go around information against normal daylight operations and, the maturity of the safety management system (SMS) of the air navigation services provider (ANSP).

## 2. DISCUSSION

2.1 The inclusion of the RRSN provisions into the PANS-ATM occurred with Amendment 1 to the 9th Edition in 1969. The amendment was approved by the Council on 23 January 1968 and restricted the use of the procedure to daylight hours only – sunrise to sunset. The majority of changes in the amendment were derived from outcomes of the Fifth Air Navigation Conference (AN-Conf/5) “stemming mainly from recommendations of the Fifth Air Navigation Conference (1967) dealing with matters aimed at improving the safety and efficiency of international air operations in the approach, landing and take-off phases...”<sup>1</sup>

2.2 The introduction of the reduced runway separation was related to a request during AN-Conf/5. It appears that multiple States were already performing such reduction procedures, however there was a clear lack of global harmonization. The Ninth Edition of the PANS-RAC (28/6/1968) (prior to the 1st Amendment) was accompanied by Supplement 1 containing the declared differences of States many of which included customised versions or what was to be later known as RRSN.<sup>2</sup>

2.3 Some 35 years later, State letter 2004/73 proposed comprehensive changes to the RRSN procedures resulting from an in-depth review by the secretariat. This review was reported to “stem from an earlier proposal to the European (EUR) [supplementary procedures] which brought to light several issues requiring resolution”<sup>3</sup>. The amendment proposal specifically sought comment on the restriction of night time operations, noting that there was a diverse view among the commissioners on the Air Navigation Commission (ANC) regarding the subject.

2.4 The State letter replies indicated that several States supported night operations albeit with an acceptable safety assessment. There was also some opposition, notably by the International Federation of Air Traffic Controllers’ Associations (IFATCA) and by the International Federation of Air Line Pilots’ Associations (IFALPA), and general support for the status-quo. It should be noted that some states were already utilizing reduced runway separation at night, and were satisfied with their safety assessment processes<sup>4</sup>.

2.5 In review the Secretariat noted the feedback and commented that as visual contact is “an integral part of the concept of reduced runway separation”<sup>5</sup>, the current provision (prohibition) should remain. The ANC agreed and the amendment was forwarded to states as State letter 2005/51 (Amendment 4 to PANS-ATM), and remains the current text in PANS-ATM 16th Edition.

2.6 It was noted by the ANC<sup>6</sup>, and by several States in their feedback to SL 2004/73, that the limitation of night operations significantly reduces the benefits afforded by the RRSN procedure<sup>7</sup>. It is recognised that airports globally are experiencing capacity constraint issues, and the *Global Air Navigation Plan* (GANP, Doc 9750) seeks to increase capacity for runway throughput where possible.

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<sup>1</sup> Amendment 1 to PANS-RAC 9th Edition, 18/09/1969, para. 3.2.

<sup>2</sup> Supplement to PANS-RAC 9th Edition, 28/06/1968.

<sup>3</sup> ICAO State Letter 2004/73, 30/7/2004, para. 4.

<sup>4</sup> Appendix B to ANC Working Paper AN-WP/7993, December 2004.

<sup>5</sup> Appendix B to ANC Working Paper AN-WP/7993, December 2004.

<sup>6</sup> Minutes to the 13th Meeting of the 166th Session of the ANC. 15/6/2004

<sup>7</sup> Appendix B to ANC Working Paper AN-WP/7993, December 2004.

Airports at latitudes are affected by seasonal daylight variations and can become constrained on a daily basis after sunset although the airline schedules have not changed, this causes a flow on effect across the ATM network. Similarly, airports in warm climates are often blessed with very long runways, however this in turn can limit capacity where separation standards are based on the runway length alone.

2.7 The implementation of RRSM, and the complementary removal of the restriction of application only during the hours of daylight from thirty minutes after local sunrise to thirty minutes before local sunset would alleviate some airport capacity constraints. As air traffic increases there will be greater pressure to utilise any untapped capacity within the existing aviation system, in this case we have a procedure that has been proven safe under certain circumstances; this opportunity to increase capacity should not be discarded in lieu of more complex, costly, and unnecessary options.

2.8 While recognising the ability for states to depart from the PANS, it is desirable to have harmonised where possible. A common approach provides much more consistency to aircrew, and allows for greater guidance for states where assistance is needed to prepare and review the safety assessment. It should also provide more consistency through clear and concise local air traffic control (ATC) procedures, which will allow more operational flexibility.

2.9 The current PANS-ATM procedures mandate a safety assessment in order to implement the daytime RRSM operations, however night operations are explicitly excluded under any circumstance.

2.10 There appears to an opportunity to transfer the existing restriction on night operations into an enhanced requirement of the safety assessment process. This would provide flexibility, but would not reduce the existing procedures in any way. In cases where the safety assessment has taken all the relevant factors into account, and provided appropriate tools, procedures, and mitigations, there should be no reason that the procedure could be deemed inappropriate.

2.11 Airports and ANSPs of the United Arab Emirates have recognised significant benefits from the introduction of RRSM during night, all without any reported safety concerns. A summary of these benefits are:

- a) simplified and consist procedures between day and night;
- b) increased arrival throughput (decreased spacing on final);
- c) increased departure throughput (reduced waiting time);
- d) decreased number of go-arounds; and
- e) decreased number of losses of runway separation

### 3. CONCLUSION

3.1 In light of the above, the Conference is invited to agree to the following recommendations:

#### **Recommendation 2.1/xx –**

That the Conference:

- a) note the contents of the working paper; and
- b) request ICAO to consider the amendment of the reduced runway separation minima (RRSM) provisions in the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) section 7.11, to permit operations during the hours of darkness subject to a safety assessment approved by the appropriate authority.

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