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Subject:	Reduced Runway Separation Minima (RRSM) OMAA
Reference:	Expired FOBM GEN-13-050

Background Information

As we are all aware, Abu Dhabi (OMAA) is rapidly becoming a capacity constrained Airport during peak times, primarily driven by the rapid expansion of Etihad Airways operations.

Options to reduce delays have been the subject of discussions between Etihad Flight Operations and the ATS provider at OMAA. Following appropriate risk assessments a list of initiatives were defined, together with the need for re-enforcement of the existing regulations. The intention is to increase airport movements from 26 to 34 movements per hour (mixed Medium and Heavy traffic). Reducing runway occupancy time during T/O and Landing is the prime driver to increasing capacity. These measures are similar to those we experience at other busy airports, such as LHR, FRA and CDG. Introduction will commence during September 2013.

The collective phrase describing these measures is Reduced Runway Separation Minima (RRSM).

When RRSM is in effect, this will be stated on the ATIS: "Reduced Runway Separation Minima in effect; pilots are advised to minimize the runway occupancy time".

An aircraft will be cleared to takeoff or land as long as ATC determines that the preceding traffic has crossed the 2400m mark from the runway threshold, ***is/will be**** airborne or ***is*** vacating the runway in a continuous movement.

(* This is provided that the preceding departure is still committed to take-off and will be imminently airborne.)


RRSM may be applied as follows:

- a. A departing aircraft and a succeeding landing aircraft using a single runway; or
- b. Two successive landing aircraft; or
- c. Two successive departing aircraft.

Conditions for the application of the Reduced Runway Separation Minima are:

1. Daytime operations only;
2. Meteorological visibility shall be equal to or greater than 5km and the

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cloud ceiling shall not be lower than 1000ft and the Air Traffic Controller is satisfied that the pilot of the following aircraft will be able to observe the relevant traffic clearly and continuously;

3. Tailwind does not exceed 5 knots, and there are no reports of windshear;
4. Traffic information shall be provided to the flight crew of the succeeding aircraft concerned;
5. The runway is dry and there is no evidence that the braking action may be adversely affected;
6. The controller is able to assess separation visually and/or by radar derived information;
7. Wake turbulence separation minima shall be applied;
8. Minimum separation continues to exist between two departing aircraft immediately after take-off of the second aircraft.

Following the risk assessments associated with this initiative, the radar separation criteria in the OMAA CTA has been reduced as follows:

Leading aircraft	Following Aircraft			
	Super Heavy	Heavy	Medium	Light
Super Heavy	4nm	6nm	7nm	8nm
Heavy	4nm	4nm	5nm	6nm
Medium	3nm	3nm	3nm	5nm
Light	3nm	3nm	3nm	3nm

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Phraseology:

The use of standard phraseology is expected; it reduces the risk of misunderstandings, prevents unnecessary R/T congestion due to repeated calls, and ultimately reduces the workload for both pilots and ATCO's.

Departures:

Communication and Workload Management:

Pilots may prepare the takeoff calculation for both the full runway and the possible expected intersection that may be used as a standard practice (listed below). Alternatively only the intersection calculation may be prepared and it will be used if the takeoff is from the full runway length instead of the intersection. This may reduce the amount of flex/assumed temperature derate available, but the impact of this has been evaluated and is acceptable. If the aircraft is performance limited and requires the full length of the respective runway, notify ATC at initiation of taxi.

Cockpit and cabin checks shall be completed prior to reaching the runway holding point; aircraft shall be ready for departure upon reaching the runway holding point, unless otherwise stated. Pilots are reminded to pay particular attention to conditional line-up clearances to avoid runway incursions.

Takeoff Sequence:


Departures will normally be cleared in the order in which they are ready for take-off; however, ATC may make exceptions to this in order to facilitate the maximum number of departures with the least average delay.

Intersection Takeoffs:

ATC may expedite departing aircraft by suggesting an intersection departure to facilitate the maximum number of departures with the least average delay. The crew may ask for an intersection as well, as this reduces the taxi time. The Commander is responsible for accepting or rejecting an intersection departure. In either case, a standard and timely communication with ATC is essential.

In order to comply with the above, pilots shall prepare for the standard intersection takeoff by calculating the performance, briefing the intersection departure, with appropriate takeoff review, etc.

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Standard runway intersection taxiways for takeoff are:

RWY 13R: E3,

RWY 13L: A3

RWY 31L: E14

RWY 31R: A16

Runway Occupancy Time:

ATC requires aircraft to commence its take-off roll within 20 seconds of being cleared for take-off. However, in the interest of expediting traffic, a clearance for immediate takeoff may be issued to an aircraft before it enters the runway. On acceptance of such clearance, the aircraft shall taxi out to the runway and take-off in one continuous movement. ATC shall provide a warning (traffic information) to the following aircraft when issuing the landing clearance. The following examples illustrate ICAO standard phraseology that shall be used for reduced runway separation:

ATC shall provide a warning (traffic information) to the following aircraft when issuing the take-off clearance. The following example illustrates ICAO standard phraseology that shall be used for reduced runway separation:

"Etihad 123, 777 departing ahead, wind 300/10kts, Runway 31Left, cleared for take-off".

ARRIVALS:

At all times during the arrival and approach, be proactive regarding wind information and your resultant ground speed, informing ATC if this will affect your ability to comply with any clearance.


Descent clearances:

When issued with a descent clearance, it is important to vacate your current altitude with no delay. ATC will issue the expected track miles to touchdown to facilitate calculation of the descent rate. If required a specific descent rate may be requested by ATC to establish required separation.

Speed Control – General:

Pilots shall adhere to the speed (IAS) approved or assigned by ATC and shall request ATC approval before making any changes thereto. If unable to maintain the last assigned speed during any particular phase of flight, e.g. for aircraft performance reasons, pilots shall inform ATC as soon as possible in order that another speed/alternative clearance can be issued. For example in

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tailwind conditions, an early call to ATC is essential when unable to comply. At all times inform ATC if you are flying a different speed to that requested.

Speed Control-Intermediate and Final Approach:

Pilots should typically expect these speed restrictions to be enforced: Maximum speed of 210kts to 10 NM final; and maximum speed of 180kts to 8 NM final; and maximum speed of 160kts to 6 NM final; and 160kts to 4 DME. These speeds are applied for ATC separation purposes and are mandatory. In the event of a new (non-speed related) ATC instruction being issued (e.g. an instruction to descend on ILS) pilots shall continue to maintain the previously allocated speed. All speed restrictions are to be flown as accurately as possible. Aircraft unable to conform to these speeds must inform ATC and state what speeds can be used. In the interests of accurate spacing, pilots are requested to comply with speed adjustments as promptly as is feasible within their own operational constraints. Pilots should advise ATC if circumstances necessitate a change of speed for aircraft performance reasons, prior to making the adjustment in speed.

Landing Clearance:

During RRSM, the landing clearance may be issued slightly later, but must be issued by 200ft RA.

ATC shall provide a warning (traffic information) to the following aircraft when issuing the landing clearance. The following examples illustrate ICAO standard phraseology that shall be used for reduced runway separation:

Landing Clearance Phraseology example:

"Etihad 123, A320 vacating at E6, wind 300/5kts, Runway 31L, cleared to land"

Note: The preceding arrival aircraft shall be reminded to vacate the runway in an expeditious manner.

Etihad 123, A320 departing ahead, wind 300/5kts, Runway 31L, cleared to land"

Runway Occupancy Time:

To reduce the runway occupancy time, pilots should vacate the runway by using the first available rapid exit taxiway as quickly as is safely possible, until the entire aircraft has passed the runway holding point. Unless otherwise instructed by ATC the preferred runway exits are:


RWY 13R: E13 (E10 for T2/Cargo Apron)

RWY 13L: A11

RWY 31L: E8 or E6

RWY 31R: A10

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In order to comply with the above, pilots shall prepare for the standard runway turnoff by calculating the landing distance (using normal flap settings, Config 3/25), briefing and applying the appropriate deceleration technique. It is very important to avoid high deceleration resulting in low speed some distance before the chosen turn off. If this becomes apparent, disarm Autobrake early to maintain speed. Remember it is Runway Occupancy Time that is critical, accurate deceleration is a key factor in minimising this.

Specific Turnoff Instructions:

ATC may request a landing aircraft to vacate the runway at a specified exit taxiway. The commander is responsible for accepting or rejecting this request. In either case, a standard and timely communication with ATC is essential.

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