



International Civil Aviation Organization

**Special Coordination Meeting on the Implementation of ATM
Contingency Arrangements (SCM-IACA)**

(Cairo, Egypt, 24 - 25 September 2014)

Agenda Item 2: Presentation of States and Users Concerns and Challenges

IRAQ ATM CONTINGENCIES FOR AIRSPACE AFFECTED BY ARMED CONFLICT

(Presented by Iraq)

SUMMARY

This paper presents an overview of the situation in the Iraqi Airspace and the contingency measures undertaken by the Iraqi Civil Aviation Authority (ICAA).

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 The meeting may wish to recall that the Insurgent group (ISIS) on 10 June 2014 overrun Mosul starting a major insurgency into Northern Iraq. Accordingly, Iraq Civil Aviation Authority initiated some mitigation measures to ensure the safety of the traffic operating in Baghdad Flight Information Region (FIR).

2. DISCUSSION

2.1 The ICAA is committed to ensuring safety within the Iraqi Airspace and will continue to work closely with the military in ensuring that overflying civilian aircraft are not threatened by the potential ground conflict.

2.2 The situation in Iraq and the contingency measures undertaken by the Iraqi Civil Aviation Authority are presented at **Appendix A**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to review the information, the contingency measures and the proposed procedures provided in **Appendix A** and take action as appropriate.

**IRAQ CIVIL AVIATION
AUTHORITY**



**سلطة الطيران المدني
العراقي**

Working Paper

Iraq

**ATM Contingencies for Airspace affected by Armed
Conflict**

**Presented to ICAO MID Special Coordination Meeting –
ATM Contingency Arrangements**

Cairo

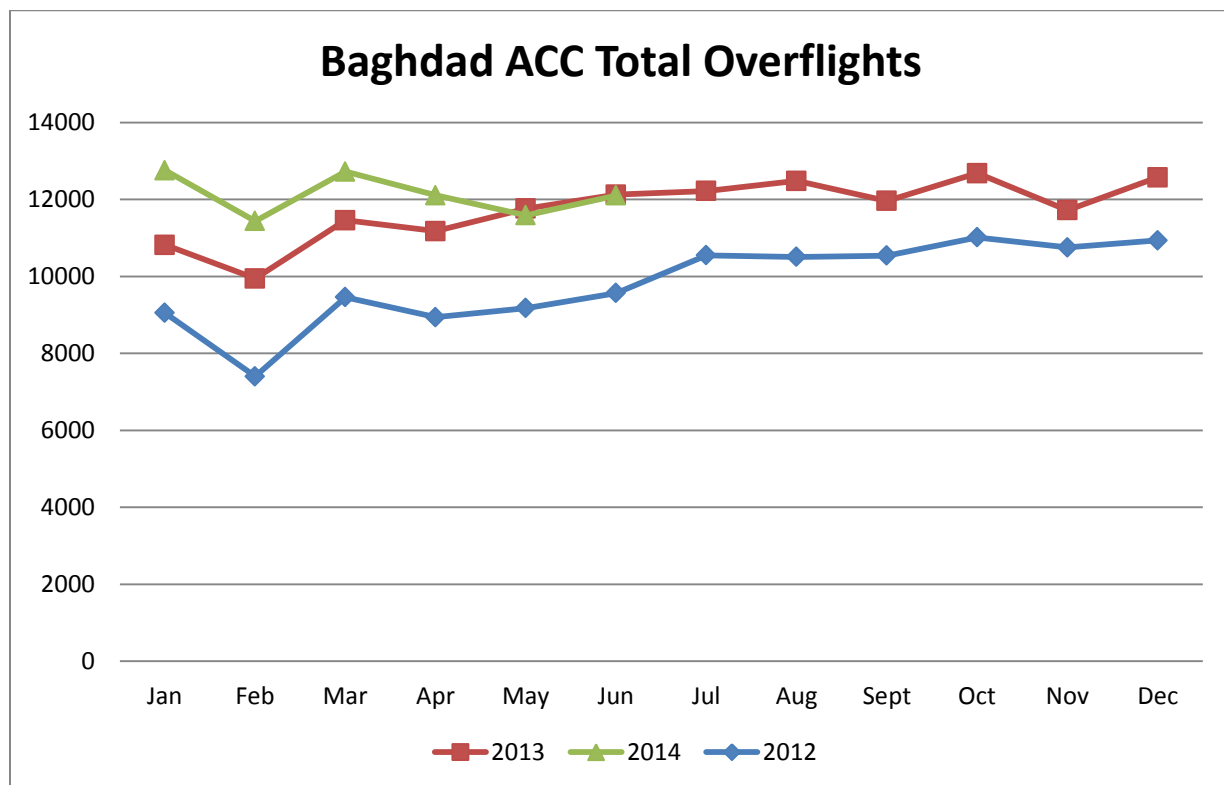
24-25 September 2014

Baghdad FIR (ORBB) covers an area 127,430 NM² and encompasses the sovereign airspace of Iraq. Baghdad FIR is located in the northern part of the Mid-East region, providing efficient routing between Europe and the Mid-East Gulf region. The airspace adjoins Ankara FIR, Teheran FIR, Kuwait FIR, Jeddah FIR, Amman FIR and Damascus FIR.

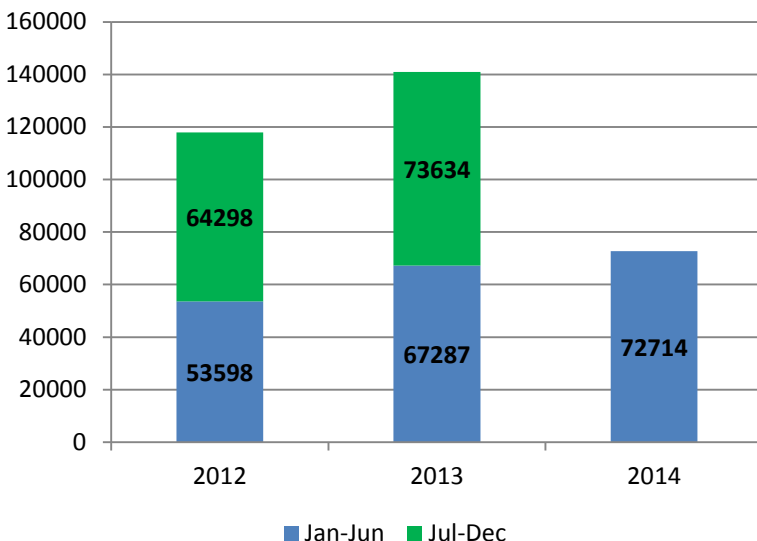
Baghdad ACC has a predominantly North/South traffic flow with most aircraft routing between Kuwait and Ankara FIRs. International commercial flights also operate to airports such as Baghdad (ORBI), Basra (ORMM), Najef (ORNI), Erbil (ORBI) and Sulamaniyah (ORSU). Overflights route mainly on ATS Route UM688 if routing southbound between NINVA and SIDAD and UL602/UM860 if routing northbound between TASMJ and KABAN.

In 2013 Baghdad ACC handled a total of 208,511 movements of which 141,354 were Overflight and 67,157 were Arrival/Departure movements during the year. This equates to approximately 385 overflight movements and 185 arrival/departure movements per day.

From 2012 Iraq has continued to see an increase in traffic movements with total overflight movements increasing by 20% in 2013 and for the 1st half of 2014 a further 8% increase in overflight traffic was noted. The graph below shows the monthly overflight traffic statistics from 2012 for Baghdad ACC.



BACC Overflights 6 Monthly Totals



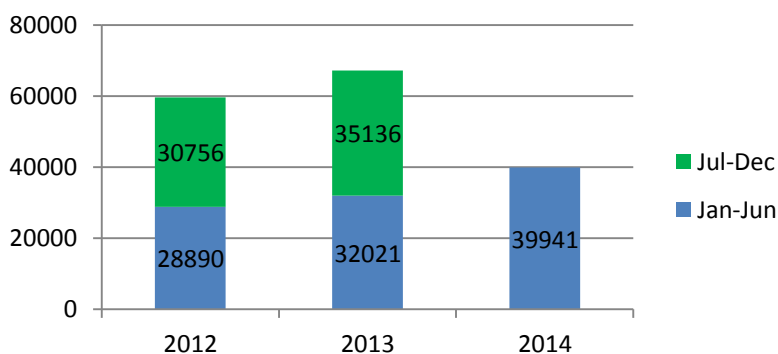
The graph alongside shows the progressive increase in overflights movements that occurred in Baghdad FIR recorded from 2012.

In early 2014 traffic levels had at times, reached the sector capacity maximums for the two ACC sectors and flow control was instituted to prevent further growth. Flow control measures, consisted of a Flight-Level Allocation scheme (FLAS) as well as specific spacing (in-trail) required on handover from

The traffic flows culminated in three workload peaks that would occur between 0600-0830 UTC; 1200-1500 UTC and 2300-0200 UTC. During these peak periods Baghdad ACC handled on average 50 overflights per hour.

Similarly, flights that arrive or depart from airports within the Baghdad FIR have also shown a steady increase growing on average 8% every 6 months. This growth is in support of the emergent business opportunities that Iraq has to offer as well as supporting religious tourism. As infrastructure is improved at various aerodromes these movements can be expected to increase further.

Baghdad FIR Arrival & Departures

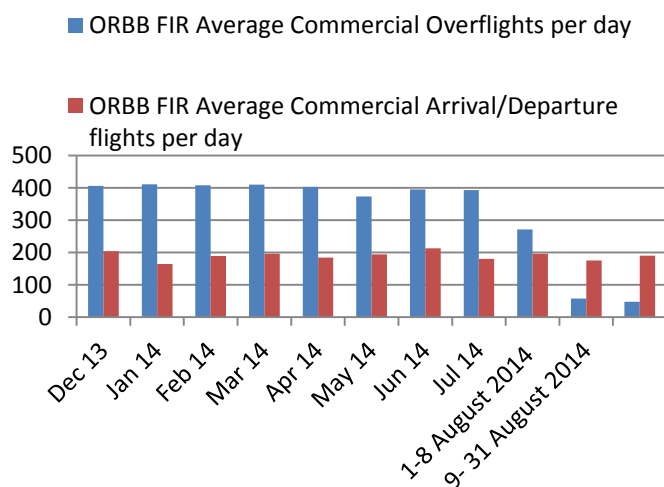


From 9 August 2014 the trends of traffic overflying the Baghdad FIR altered dramatically. Commercial air carriers dropped from an average of 385 daily overflights to a mere 53 overflights per day. Conversely commercial air carriers arrival and departure movements to

airports within Iraq rose marginally to an average of 190 movements per day. This dramatic drop in traffic reduced the traffic levels similar to those handled in 2010.

The table and graph below shows the average daily movements per month for commercial air carriers.

Month	ORBB FIR Average Commercial Overflights per day	ORBB FIR Average Commercial Arrival/Departure flights per day
December 2013	406	204
January 2014	411	165
February 2014	408	189
March 2014	410	196
April 2014	403	184
May 2014	373	194
June 2014	395	213
July 2014	393	180
1-8 August 2014	272	196
9- 31 August 2014	58	176
1-14 September 2014	48	190



As can be seen from the graph alongside, commercial air carrier movements have remained within similar ranges until August 2014. On 8 August 2014 the Federal Aviation Authority (FAA) issued a NOTAM restricting US operators from flying in airspace above Iraq due to the potentially hazardous situation created by the armed conflict. The NOTAM had a drastic effect on overflight traffic within Iraq.

The FAA has previously issued NOTAM action for Iraqi airspace placing restrictions on permitted operations by American carriers. From 7 January 2013 FAA SFAR no 77, (FDC 3/5401) *“Prohibition against certain flights within the territory and airspace of Iraq”* stated that no US operator may conduct flights over or within Iraq except in the case of overflights, which may be



operated above FL200 and for flights destined to or originating from Erbil (ORER) and Sulaymaniyah (ORSU) which may operate below FL200 when initiating an arrival or departure from the applicable airport.

On 31 July 2014 the FAA increased the restrictions of SFAR 77 by publishing a NOTAM (FDC 4/8154) prohibiting American operators from operating in or overflying Iraq airspace below FL300. The NOTAM also prohibited previously allowed operations to and from Erbil and Sulaymaniyah by American operators.

On 8 August 2014 the FAA published FDC4/1621 citing the potentially hazardous situation created by the armed conflict between militants associated with the Islamic State in Iraq and Leviant and Iraq security forces and their allies and effectively prohibiting all American operators from flight operations within the Baghdad FIR.

To fully understand the reason for the perceived hazardous situation to commercial aviation and the level of threat posed the following significant dates should be considered:

- | | |
|------------------|---|
| 30 December 2013 | Initial reports indicate that clashes between Iraqi Security forces and the insurgent group ISIS begin in Ramadi, a city in central Iraq and approximately 110km west of Baghdad. |
| 4 January 2014 | Clashes spread to Falluja, a city in Al-Anbar province and 69km west of Baghdad. Indication is that control of both Falluja and Ramadi has fallen to ISIS. |
| 29 April 2014 | Iraq holds elections and for security closes all airspace below FL230 and all airports for commercial traffic. Overflights above FL240 are still accepted. |
| 10 June 2014 | Insurgent group (ISIS) overrun Mosul starting a major insurgency into Northern Iraq. |
| 29 June 2014 | Insurgent group (ISIS) release a press statement changing their name to IS and declares their intention to form a Caliphate in Northern Iraq and Syria. |
| 17 July 2014 | MAS17 on a flight from EHAM to WMKK is reported to have been shot down over the Ukraine. |



- 29 July 2014 ICAO holds a meeting in Montreal to discuss the dangers of commercial aircraft flying over conflict zones. The outcome of the meeting is that a taskforce would be established to come up with further recommendations.
- 31 July 2014 FAA publishes a NOTAM prohibiting American operators to operate below FL300 within the Baghdad FIR.
- 8 August 2014 The FAA issues a NOTAM prohibiting all American commercial operations within the Baghdad FIR. Of note is that there was only limited number of American commercial airlines flying through Iraq, most significantly Delta Airways with a handful of flights daily.

Daily analysis of commercial overflight and arrival/departure traffic is shown on the graphs on the following pages with the applicable significant dates marked on the graphs

Although there was an initial decline in overflight traffic on 1 January 2014, after the offensive on Ramadi, this was associated rather with the typical reduction in flights that occur on New Year's Day. Both Arrival/Departure and Overflight movements returned to values associated

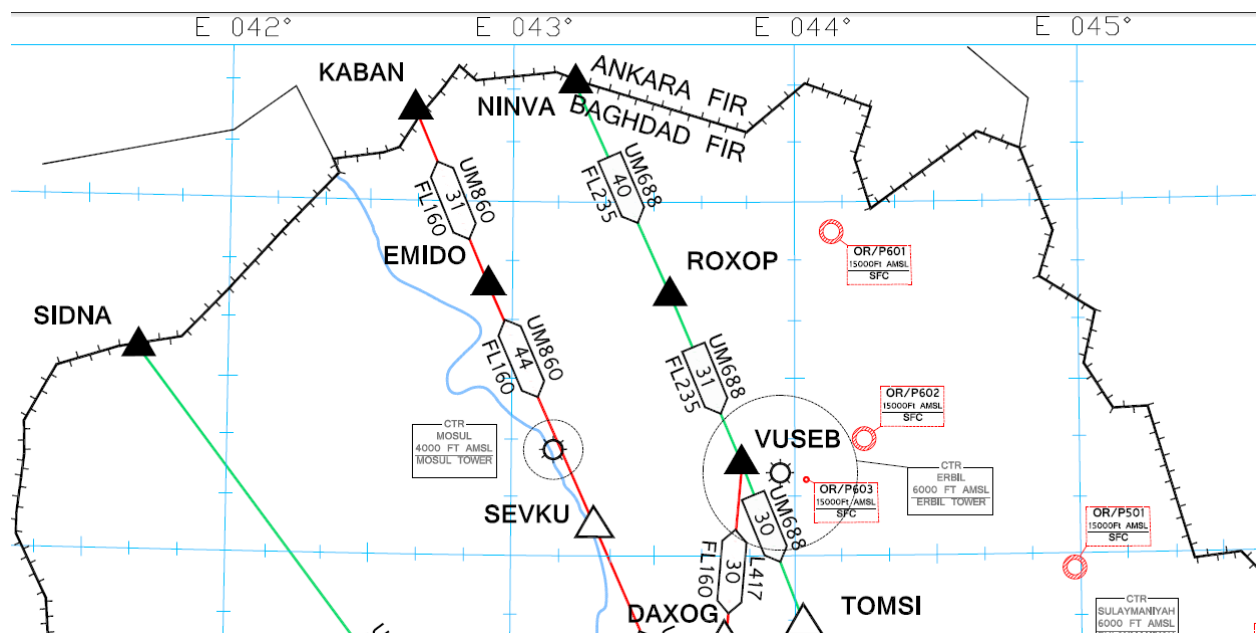
During the national Iraqi elections on 29 April, all Iraqi Airports were closed to civilian traffic. Special exemption was issued to a limited number of flights and only 9 arrival/departure movements were recorded.

On 10 June 2014 Mosul is overrun by insurgent activity in the north of Iraq. Mosul airport closes due to the threat however all other traffic within Iraq continues to operate normally. Commercial overflight traffic continues to operate at normal capacity. Military aid is provided by mostly American and Iraqi Air Forces over the following weeks seeing a 35% increase in military movements within the Baghdad FIR.

On 17 July 2014 a civilian airliner is reportedly shot down whilst operating over eastern Ukraine. An initial spike in civilian aircraft overflights in Iraq is recorded in Iraq with 480 overflights per day on 25 July 2014. The spike is due to airlines amending routes to avoid the Ukraine. In the aftermath of the accident questions are raised about airliners routing over conflict zones. ICAO holds an initial meeting in Montreal on 29 July 2014, after which a decline in overflight traffic in Iraq is noticed to approximately 2/3 of normal.

On 9 August 2014 following the publication of the NOTAM by the FAA, commercial overflight traffic reduced to 14% of the usual commercial overflight handled. International media were reporting that post the Ukrainian Disaster with MH17, commercial airliners were flying over

other conflict zones in the world in places such as Iraq and Libya. Specific attention had been given by the media that the ATS route structure within Iraq routed near the town of Mosul that had been overrun during the insurgency. The airway in concern is UM860 that routes to the east of Mosul Airport.

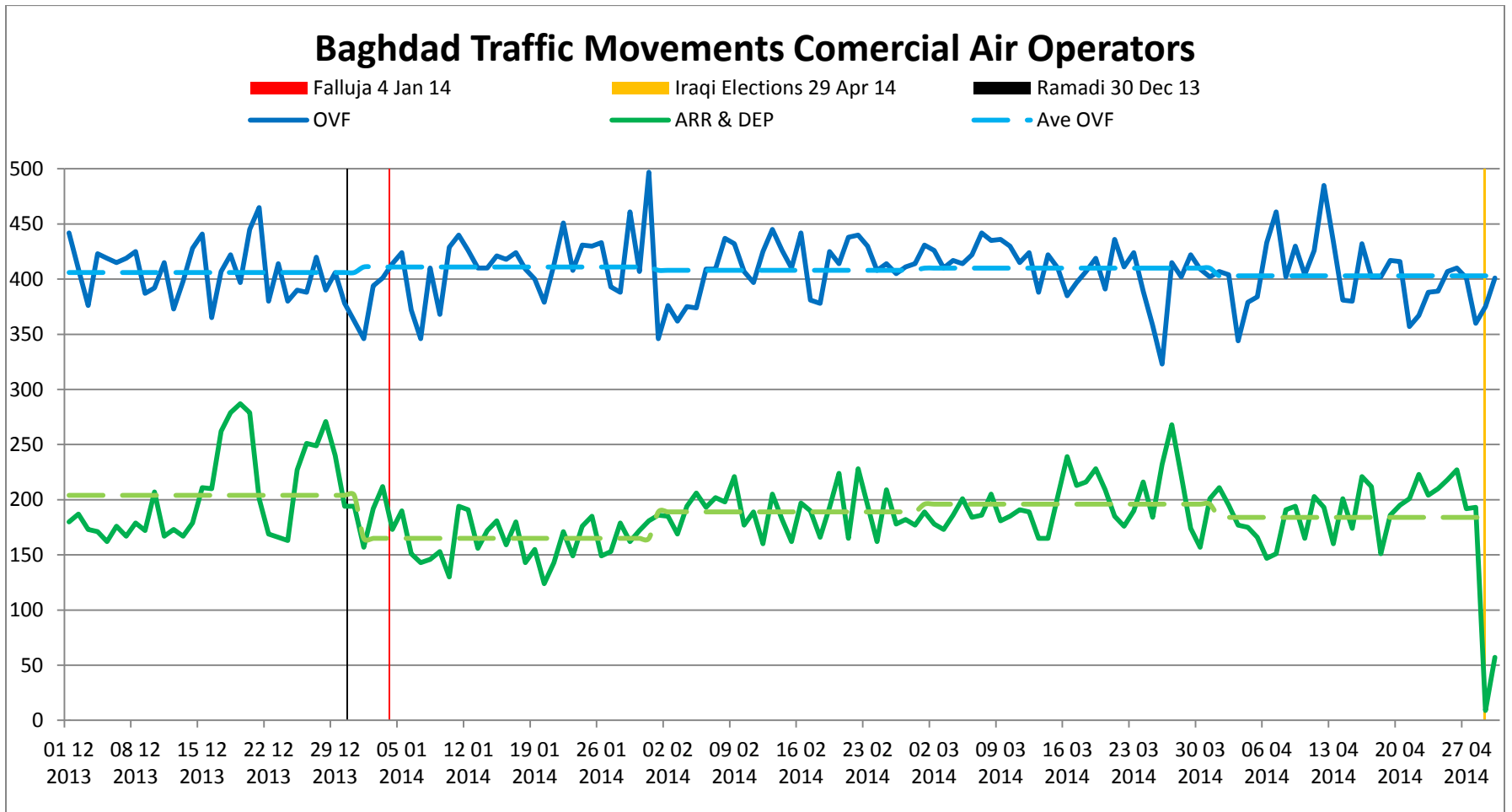


It should be noted that prior to 9 August 2014, for the preceding 60 days traffic had operated normally on these routes without any incidents related to the ground invasion.

Traffic has continued to route to and from major airports such as Basra, Baghdad, Erbil and Sulamaniyah. Arrival and Departure movements have not been negatively effected over the same time period that the overflights were discontinued.

To date there have been no reported security incidents whilst civilian aircraft have been on the current ATS route structure within Iraq. Aircraft arriving and departing Iraqi airports have joined the same ATS route structure that would be used for overflights once above FL240.

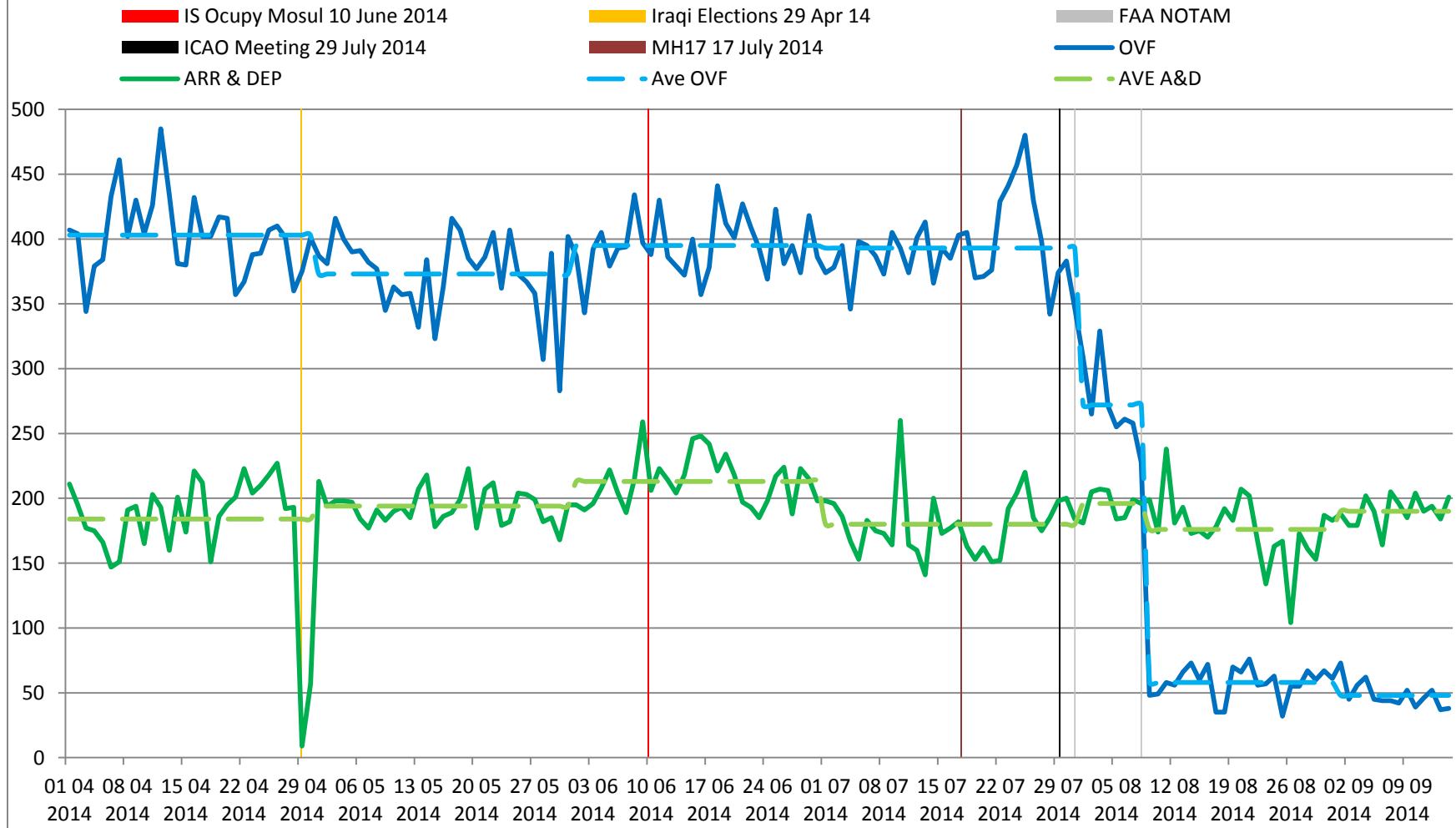
A number of commercial airliners continue to fly across Baghdad FIR, including flights from TASMI in the South to land at Erbil and Sulamaniyah.



Graph 1



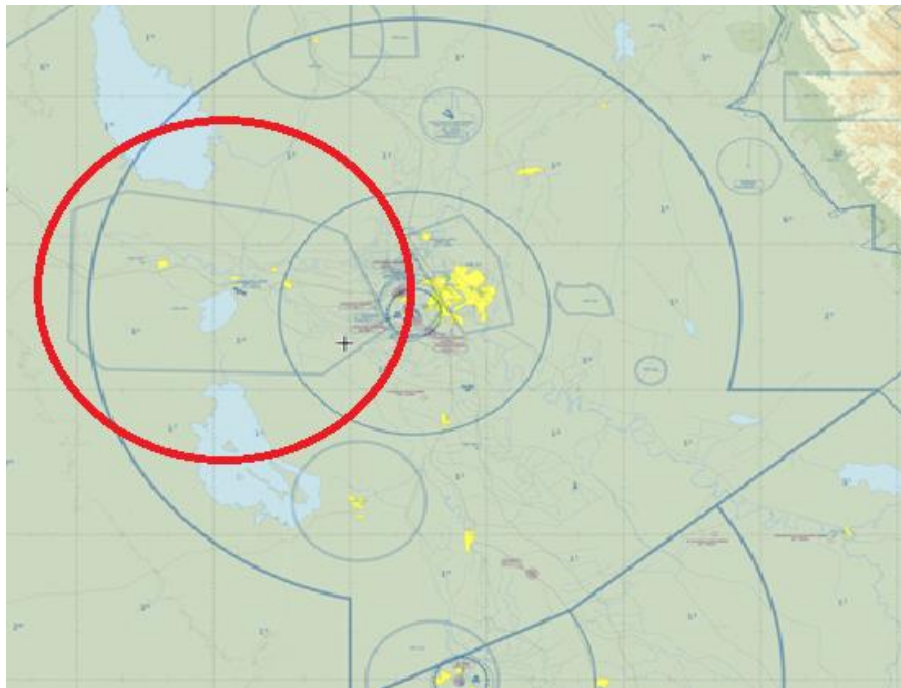
Baghdad Traffic Movements Comercial Air Operators



Article 9 of the Convention on International Civil Aviation (Doc 7300) sets forth that states may, for reasons of military necessity and public safety, restrict or prohibit uniformly aircraft of other states from flying over its territory. Such restriction is usually done by the publication of NOTAM, AIP Supplements or other means.

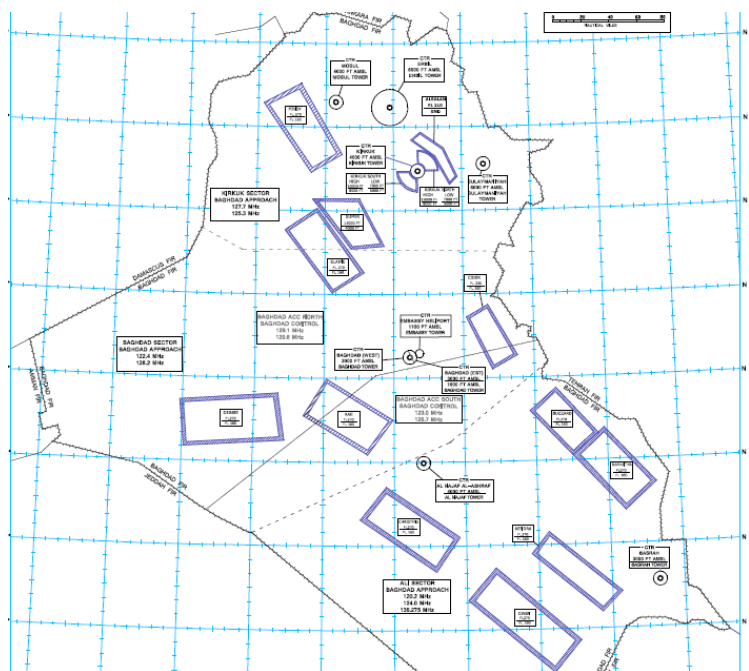
Since the beginning of the invasion in December 2013, the ICAA has worked in close cooperation with the Iraqi Security Forces in ensuring the safety of civilian air traffic in maintained by routing civilian aircraft away from the conflict areas. A permanent military liaison officer is stationed within the Baghdad Air Traffic Control Facility and this officer coordinates activity between the Security Forces and the Air Traffic Controllers.

Initially when the offensive started in December 2013, through internal procedures and tactical traffic management the airspace over Ramadi and Falluja was restricted to military access only. After a period it was clear that the conflict would not be resolved in a short period. NOTAM action declaring the airspace as Restricted was promulgated. The airspace has been incorporated into the Iraqi AIP and is shown of charts to assist crews in flight planning and to ensure that military operations remain segregated from civilian traffic.



Airspaces are managed tactically on a daily basis with the military liaison officers and civilian aircraft are rerouted when required to avoid areas of known conflict.

In improving operations with the military and to ensure that military operations remain segregated from civilian operations additional Military Operating Areas (MOA) have been established within the Iraqi FIR. These are published and are activated on a tactical basis as required for missions.



Procedures have been developed with the military to ensure that these MOA are used for non-hazardous military activities and reduce the workload on controllers and liaison officers. Further to the MOA areas Restricted Operational Zones (ROZ) are established tactically on an as needed basis in areas of potential hazardous activity or for strategic military operations. Controllers are aware of active ROZ and ensure that civilian traffic is kept clear of the vertical and lateral limits of the ROZ.

Active airspace (MOA, ROZ or Restricted areas) area displayed on the Controllers' displays to assist in ensuring that non-participating flights are kept clear of areas where there may be high density military traffic or potential conflict. In all cases the airspaces are determined to be of reasonable extent taking into consideration civilian air traffic and the impact on their routings so as to not unnecessarily interfere with air navigation



Current active military areas have been activated in the northern part of Iraq from surface to FL270. Civilian traffic has continued to route either around the airspace or at levels above the restricted airspace without incident. Alternate arrival and departure procedures have been devised after consultation with the airlines to allow continued operations into aerodromes located near the potentially hazardous areas. These include shorter routings under visual conditions and are handled individually on request.

The meeting is invited to present comments on the possibility of temporarily revising the ATS route structure, to still allow optimal routing through Iraq.

One proposal would be to change ATS Route UP975 to be bi-directional. The route is currently unidirectional and is located to the eastern side of the Irani FIR.



To ensure continuity with Kuwait and so as not to affect the MID Region traffic flow northbound traffic could flightplan TASMI UL602 ITBIT VAXEN UJMUG RIDIP OTALO TOMSI VUSEB ROXOP NINVA SRT.

This routing would however require a new temporary route being established in Ankara FIR from NINVA to SRT to allow for the route structure to reintegrate with the European route structure.

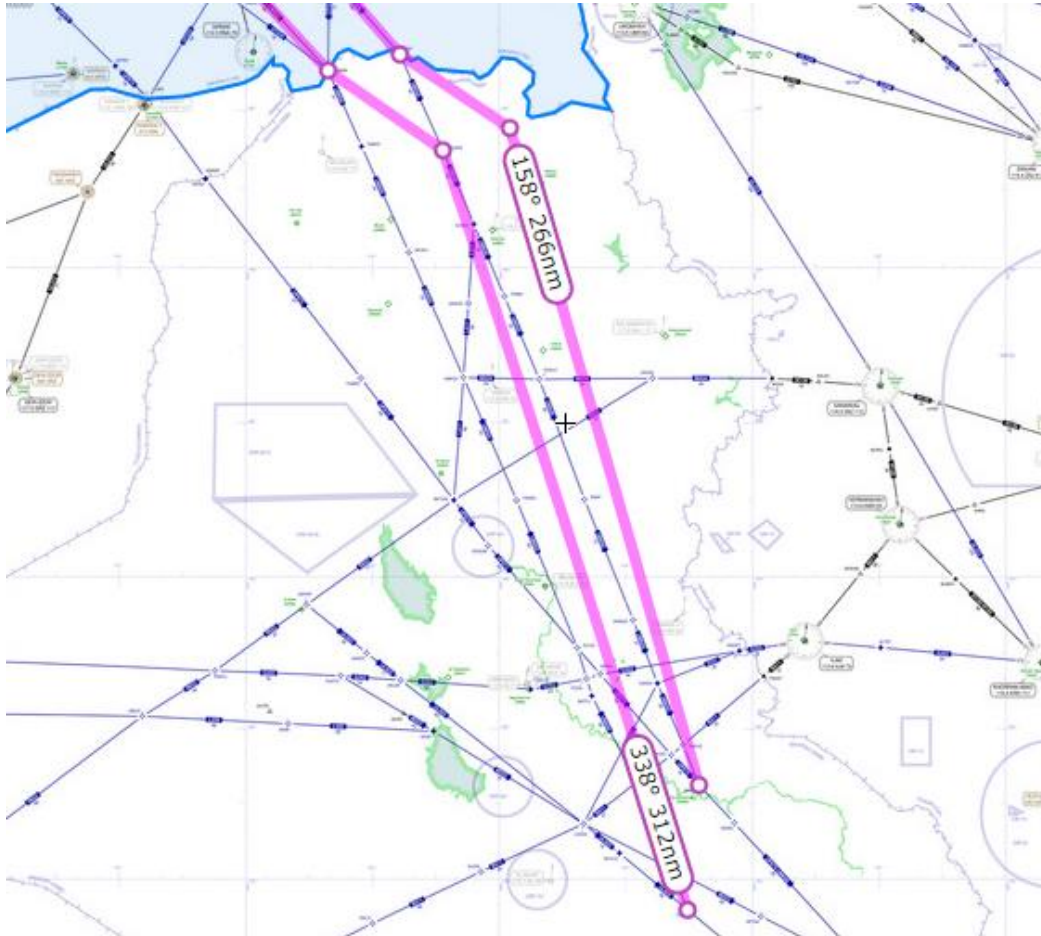


Alternatively to allow re-integration with the European route structure traffic could flight plan TASMI UL602 ITBIT VAXEN UJMUG RIDIP OTALO TOMSI VUSEB ROXOP KABAN SRT. The second proposal would not require any additional route infrastructure development from neighbouring FIRs.

A single bidirectional route structure would however have significant capacity restrictions.

A more efficient proposal would allow for the temporary establishment of two separate parallel route structures. Northbound traffic would continue to route TASMI UL602 ITBIT UM860 SEPTU however would then leave the current route structure and route SEPTU DCT ROXOP DCT KABAN.

Southbound traffic would leave NINVA on a heading of 120° for approximately 50NM before setting track direct KATUT. A temporary waypoint would be required to allow for flight planning.



These parallel routings would allow continued traffic flow through Iraq without impacting on the areas of possible conflict and military activities.

Flow control measures would still be implemented due to the high number of military traffic still operating in the sectors, however the revised routing structure would allow for continued civilian operations within Baghdad FIR.



The meeting is requested to note that commercial traffic has continued within the Baghdad FIR without incident relating to the ground invasion from when the offensive started. Tactical measures are in place within Baghdad FIR to re-route traffic should a perceived threat be made to commercial traffic.

After consultation with military forces and acting on available intelligence, commercial operators have been routed above the upper limit of Restricted airspace, regularly overflying these at high levels. If an airliner is not able to route above the minimum level allocated by the military then they are vectored around such airspaces.

Arrivals and Departures have continued specifically to airports such as Erbil. In some cases airlines have routed through the majority of the FIR entering at TASMI and flying 450NM to Erbil on the current route structure, however Erbil is located only 90NM from the FIR Exit point KABAN.

The ICAA has been able to accommodate a number of airlines specific requests for routing through the Baghdad FIR and is willing to engage in further discussions should this be needed.

The ICAA is committed to ensuring safety within Iraqi airspace and will continue to work closely with the military in ensuring that overflying civilian aircraft are not threatened by the potential ground conflict.

The meeting is encouraged to provide further suggestions and comments on this proposal and in developing contingency plans for the MID Region to allow continued operations but most importantly ensuring flight safety.

Your cooperation and participation in developing regional harmonized contingency plans are greatly appreciated.

MR. Ali Muhsin Hashim
Director ATS, ICAA
+964 781 576 2525