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AIP
SUP
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Simultaneous Operations on Parallel Instrument Runways in Riyadh / King Khaled International Airport

1 .Purpose

The purpose of this AIP SUP is to provide information on the Simultaneous Operations on Parallel Instrument Runways in Riyadh/ King Khaled International Airport.

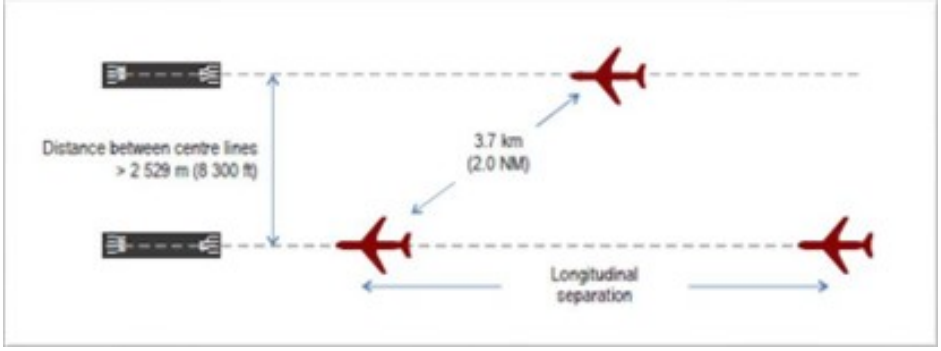
The SOIR will be used to minimize the workload of controllers during peak operational hours, increase the airport capacity under visual meteorological conditions (VMC) for aircraft under instrument flight rules (IFR), reduce potential delays and maintain a safe, orderly and expeditious flow of traffic.

2 .Independent Parallel Runway Operations Procedures

At OERK, simultaneous parallel runway operations are in use, both for departures and for arrivals. Simultaneous Parallel Departures can be conducted from any of the two parallel instrument runways. Simultaneous parallel approaches according to the traffic imbalance or to mode of operations, can be conducted as Dependent Parallel Approaches or Independent Parallel Approaches.

3 .Dependent Parallel Approaches (Mode 2)

Dependent Parallel Approaches are simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway center lines are prescribed.



During Dependent Parallel Approaches operations (Mode 2), in the final Approach Sector, the minimum surveillance separation of 1,000 ft vertical or 5.0 NM horizontal is required until aircraft are established on the final approach tracks.

During Dependent Parallel Approaches operations, a 2 NM diagonal shall be provided between inbound aircraft established on the final approach tracks.

The applicable instrument approach procedures for Simultaneous Dependent Parallel Approaches at Riyadh King Khaled International Airport are as follows:

OERK ILS Z RWY 33L	OERK ILS Z RWY 33R
OERK ILS Y RWY 33L	OERK ILS Y RWY 33R
OERK ILS Z RWY 15L	OERK ILS Z RWY 15R
OERK ILS Y RWY 15L	OERK ILS Y RWY 15R

Each pair of parallel approaches has a "high side" and a "low side" to provide vertical separation until the aircraft are both established inbound on their respective instrument approach procedures. The flights need to be established at the "high side"/"low side" altitude before receiving vectors for the ILS localizer course.

Dependent Parallel Approaches operations will be notified to pilots via ATIS during active periods.

4 .Independent Parallel Approaches (Mode 1)

Independent parallel approaches are simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway center lines are not prescribed.

During Independent Parallel Approaches operations (Mode 1), in the final Approach Sector, the minimum surveillance separation of 1,000 ft vertical or 5.0 NM horizontal is required until aircraft are established on the final approach tracks.

When Independent Parallel Approaches are in operation, pilots must advise in the initial contact with Riyadh Approach Control, if they are unable to participate.

When Independent Parallel Approaches are in operation, all arrival traffic within 25 NM from KSA DVORTAC must monitor the final approach monitoring controller frequency 125.600MHz until landed.

The applicable instrument approach procedures for Simultaneous Independent Parallel Approaches at Riyadh King Khaled International Airport are as follows:

OERK ILS Z RWY 33L	OERK ILS Z RWY 33R
OERK ILS Y RWY 33L	OERK ILS Y RWY 33R
OERK ILS Z RWY 15L	OERK ILS Z RWY 15R
OERK ILS Y RWY 15L	OERK ILS Y RWY 15R

Each pair of parallel approaches has a "high side" and a "low side" to provide vertical separation until the aircraft are both established inbound on their respective instrument approach procedures. The flights need to be established at the "high side"/"low side" altitude before receiving vectors for the ILS localizer course.

Independent Parallel Approaches operations will be notified to pilots via ATIS during active periods.

5 .Normal Operating Zone (NOZ)

An airspace of defined dimensions extending to either side of a published instrument approach procedure final approach course or track. Only half of the normal operating zone adjacent to a no transgression zone (NTZ) is taken into account in independent parallel approaches.

6 .No Transgression Zone (NTZ)

In the context of independent parallel approaches, a corridor of airspace of defined dimensions is located centrally between the two extended runway center lines, where a penetration by an aircraft requires an ATCO intervention to maneuver any threatened aircraft on the adjacent approach.

7 .Break-Out Maneuvers

If the ATC surveillance system display indicates that an aircraft will penetrate the NTZ, an advisory broadcast will be issued to the aircraft, the phraseology will be: “(call sign), radar indicates you are deviating (left/right) of the final approach path”.

If any aircraft is committing an NTZ infringement, the final Approach monitoring controller will provide a break-out instruction to the aircraft under their responsibility to protect it from the threat. Break-out maneuvers consist of heading and altitude instructions.

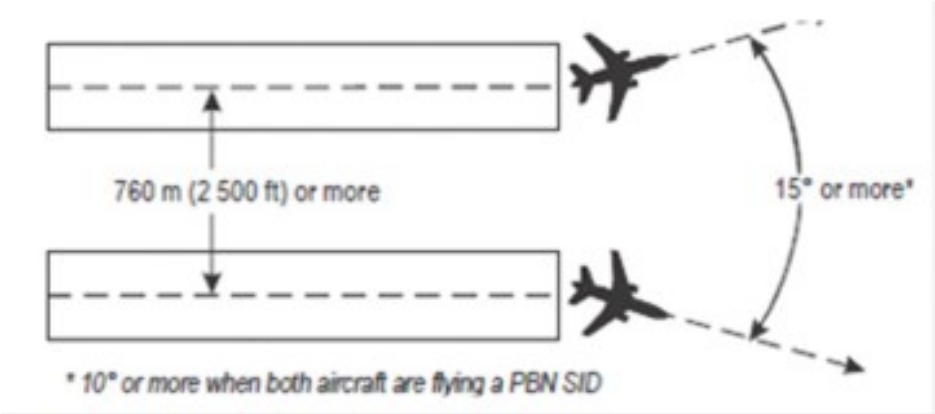
The final approach monitoring controller will issue a break-out maneuver on the monitor control frequency of 125.600 MHZ or will override the relevant tower frequency when issuing a break-out maneuver because of the infringement of the NTZ from the adjacent approach path.

BREAK-OUT phraseology will be:
BREAK-OUT Alert, (callsign), turn (Left or Right), Immediately Heading (3 digits), Climb (or descend) to (altitude).

No break-out maneuvers will be issued when aircraft is below 400ft AGL.

8 .Independent Parallel Departures (Mode 3)

The design of RNAV SIDs permits Simultaneous Independent Parallel Departures in compliance with DOC 9613 requirements.



The following RNAV SIDs are deemed laterally separated and applicable for Mode 3 operation.

- **RWY 33L / 33R:**

RWY 33L	RWY 33R
LONIB IC	TORKI 2D
MERVI 2C	ORNIP 1D
UMASU 2C	EGPIN 1D
KUNLO 2C	OTALI 2D
IVONU 2C	RAPMA 2D
TOTEB 1C	AMBAG 2D

- **RWY 15L / 15R:**

RWY 15L	RWY 15R
OTALI 2E	RAPMA 1B
EGPIN 1E	AMBAG 1B
ORNIP 1 E	TOTEB 1B
TORI 2E	MERVI 2B
LONIP 1E	UMASU 1B
-	KUNLO 1B
-	IVONU 2B

The following RNAV SIDs may be utilized in Mode 3 operations, provided that ATS surveillance is capable of identifying aircraft within 1.0 NM from the departure end of the runway and that ATS procedures ensure the required separation between aircraft departing simultaneously from adjacent parallel runway.

- **RWY 33L / 33R:**

RWY 33L	RWY 33R
TORKI 2C	LONIB 1D
ORNIP 1C	IVONU 2D
EGPIN 1C	KUNLO 2D
OTALI 2C	UMASU 2D
RAPMA 2C	MERVI 2D
AMBAG 2C	TOTEB 1D

- **RWY 15L / 15R:**

RWY 15L	RWY 15R
RAPMA 1E	OTALI 2B
AMBAG 1E	EGPIN 1B
TOTEB 1E	ORNIP 1B
MERVI 2E	TORKI 2B
UMASU 1E	LONIB 1B
KUNLO 1E	-
IVONU 2E	-

Pilots must adhere strictly to the published RNAV SIDs initial segments.

Independent Parallel Departures operations will be notified to pilots via ATIS during active periods.

9 .Segregated Operations on Parallel Runways (Mode 4)

Segregated Operations on Parallel Runways (Mode 4) is utilized 24 hours at OERK as follows:

The following SIDs and ILS approaches are to be utilized for segregated operations (Mode4) at King Khaled International Airport:

- SID RNAV RWY 33R & ILS Z RWY 33L
- SID RNAV RWY 33R & ILS Y RWY 33L
- SID RNAV RWY 33L & ILS Z RWY 33R
- SID RNAV RWY 33L & ILS Y RWY 33R
- SID RNAV RWY 15R & ILS Z RWY 15L
- SID RNAV RWY 15R & ILS Y RWY 15L
- SID RNAV RWY 15L & ILS Z RWY 15R
- SID RNAV RWY 15L & ILS Y RWY 15R

RNAV SIDs RWY 33R with two approach procedures ILS Z 33L and ILS Y 33L:
The following are the restricted list of SIDs and approach procedures on both RWYs to be used simultaneously and authorized as segregated operations.

Arrival RWY	Type of Approach	Departure RWY	RNAV SIDs	Remarks
RWY 33L	ILS Z RWY 33L	RWY 33R	TORKI 2D	• All departures and approaches are separated. • Segregated operations are applicable.
			ORNIP 1D	
			EGPIN 1D	
			OTALI 2D	
			RAPMA 2D	
			AMBAG 2D	
	ILS Y RWY 33L		LONIB 1D	• Segregated operations are applicable. • ATS procedures shall ensure that departing and arriving aircraft are separated in the event of a missed approach.
			IVONU 2D	
			KUNLO 2D	
			UMASU 2D	
			MERVI 2D	
			TOTEB 1D	

RNAV SIDs RWY 33L with two approach procedures ILS Z 33R and ILS Y 33R:
The following are the restricted list of SIDs and approach procedures on both RWYs to be used simultaneously and authorized as segregated operations.

Arrival RWY	Type of Approach	Departure RWY	RNAV SIDs	Remarks
RWY 33R	ILS Z RWY 33R	RWY 33L	LONIB IC	• All departures and approaches are separated. • Segregated operations are applicable
			TORKI 2C	
			ORNIP 1C	
			EGPIN 1C	
			OTALI 2C	
			RAPMA 2C	
	ILS Y RWY 33R		AMBAG 2C	
			TOTEB 1C	
			MERVI 2C	
			UMASU 2C	
			KUNLO 2C	
			IVONU 2C	

RNAV SIDs RWY 15L with two approach procedures ILS Z 15R and ILS Y 15R:
The followings are the restricted list of SIDs and approach procedures on both RWYs to be used simultaneously and authorized as segregated operations.

Arrival RWY	Type of Approach	Departure RWY	RNAV SIDs	Remarks
RWY 15R	ILS Z RWY 15R	RWY 15L	LONIB IE	• All departures and approaches are separated. • Segregated operations are applicable.
			TORKI 2E	
			ORNIP 1E	
			EGPIN 1E	
			OTALI 2E	
			RAPMA 1E	
	ILS Y RWY 15R		AMBAG 1E	
			TOTEB 1E	
			MERVI 2E	
			UMASU 1E	
			KUNLO 1E	
			IVONU 2E	

RNAV SIDs RWY 15R with two approach procedures ILS Z 15L and ILS Y 15L:
The followings are the restricted list of SIDs and approach procedures on both RWYs to be used simultaneously and authorized as segregated operations.

Arrival RWY	Type of Approach	Departure RWY	RNAV SIDs	Remarks
RWY 15L	ILS Z RWY 15L	RWY 15R	RAPMA 1B	• All departures and approaches are separated. • Segregated operations are applicable.
			AMBAG 1B	
			TOTEB 1B	
			MERVI 2B	
			UMASU 1B	
			KUNLO 1B	
	ILS Y RWY 15L		IVONU 2B	
			OTALI 2B	• Segregated operations are applicable. • ATS procedures shall ensure that departing and arriving aircraft are separated in the event of a missed approach.
			EGPIN 1B	
			ORNIP 1B	
			TORKI 2B	
			LONIB 1B	

However, during the segregated operations on parallel runways (Mode 4), TWR controllers will ensure that minimum separation exists between all departures and missed approach flights from the same RWY or from different RWYs and will not transfer to Riyadh APP until clear of all conflicts.

10 .ATS Communication Facilities

Service Designation	Call Sign	Frequency	Hours Of Operation	SATVOICE	Logon Address	Remarks
APP	Riyadh Control	124.100 MHZ DOC 150 NM/60000 FT	H24	NIL	NIL	Riyadh Control Area South/Primary VHF
		126.000 MHZ DOC 150 NM/60000 FT	H24			Riyadh Control Area North/Primary VHF
		128.500 MHZ DOC 150 NM/60000 FT	H24			Riyadh Control Area North& South / Secondary VHF
		385.100 MHZ DOC 150 NM/60000 FT	H24			Riyadh Control Area North& South / Primary UHF
		342.600 MHZ DOC 150 NM/60000 FT	H24			Riyadh Control Area North& South / Secondary UHF
		121.500 MHZ	H24			Emergency VHF
		243.000 MHZ	H24			Emergency UHF
	Riyadh Approach	120.000 MHZ DOC 75 NM/28000 FT	H24	NIL	NIL	Riyadh Terminal Control Area/Primary VHF
		120.600 MHZ DOC 75 NM/28000 FT	H24			Riyadh Terminal Control Area/Secondary VHF
		340.600 MHZ / DOC 75 NM/28000 FT	H24			Riyadh Terminal Control Area/Primary UHF
		277.150 MHZ DOC 75 NM/28000 FT	H24			Riyadh Terminal Control Area/Secondary UHF
		121.500 MHZ	H24			Emergency VHF
		243.000 MHZ	H24			Emergency UHF
	Riyadh Final East	119.750 MHZ DOC 60 NM/28000FT As directed by ATC	H24	NIL	NIL	Riyadh Final approach East Sector/Primary VHF
	Riyadh Final West	120.450 MHZ DOC 60 NM/28000 FT As directed by ATC	H24			Riyadh Final approach West Sector/Primary VHF

	Riyadh Monitor Control	125.600 MHZ DOC 60 NM/28000 FT As directed by ATC	H24			NIL
	Riyadh Final	120.600 MHZ DOC 75 NM/28000 FT As directed by ATC	H24			Riyadh Final approach West & East Sector/Secondary VHF
		343.400 MHZ DOC 60 NM/28000 FT	H24			Riyadh Final approach West & East Sector/ Primary UHF
		121.500 MHZ	H24			Emergency VHF
		243.000 MHZ	H24			Emergency UHF

11 .Riyadh Approach Final Director (APF)

The Riyadh Approach Final Director (APF) vertical and lateral dimensions are as follows.

Riyadh Final Director East (APF-E):

RWY 33R in use:

250449.53N 0465714.29E
245731.88N 0464152.35E
242243.92N 0470344.87E
242959.09N 0471903.01E
Vertical limit from ALT 700 FT AGL to 11000FT AMSL excluding Riyadh CTR

RWY 15L in use:

253933.85N 0463509.06E
253214.73N 0461945.25E
245731.88N 0464152.35E
250449.53N 0465714.29E
Vertical limit from ALT 700 FT AGL to 11000FT AMSL excluding Riyadh CTR

Riyadh Final Director West (APF-W):

RWY 33L in use:

245731.88N 0464152.35E
245013.25N 0462633.59E
241527.47N 0464829.17E
242243.92N 0470344.87E
Vertical limit from ALT 700 FT AGL to 11000FT AMSL excluding Riyadh CTR

RWY 15R in use:

253214.73N 0461945.25E
252454.17N 0460423.70E
245013.25N 0462633.59E
245731.88N 0464152.35E
Vertical limit from ALT 700 FT AGL to 11000FT AMSL excluding Riyadh CTR

12 .CONTACTS

For further information or to send your feedback, please contact Airspace Management via E-mail: asm@sans.com.sa

13 .VALIDTY

This AIP Supplement will remain valid until the information is superseded or incorporated into the AIP KSA.

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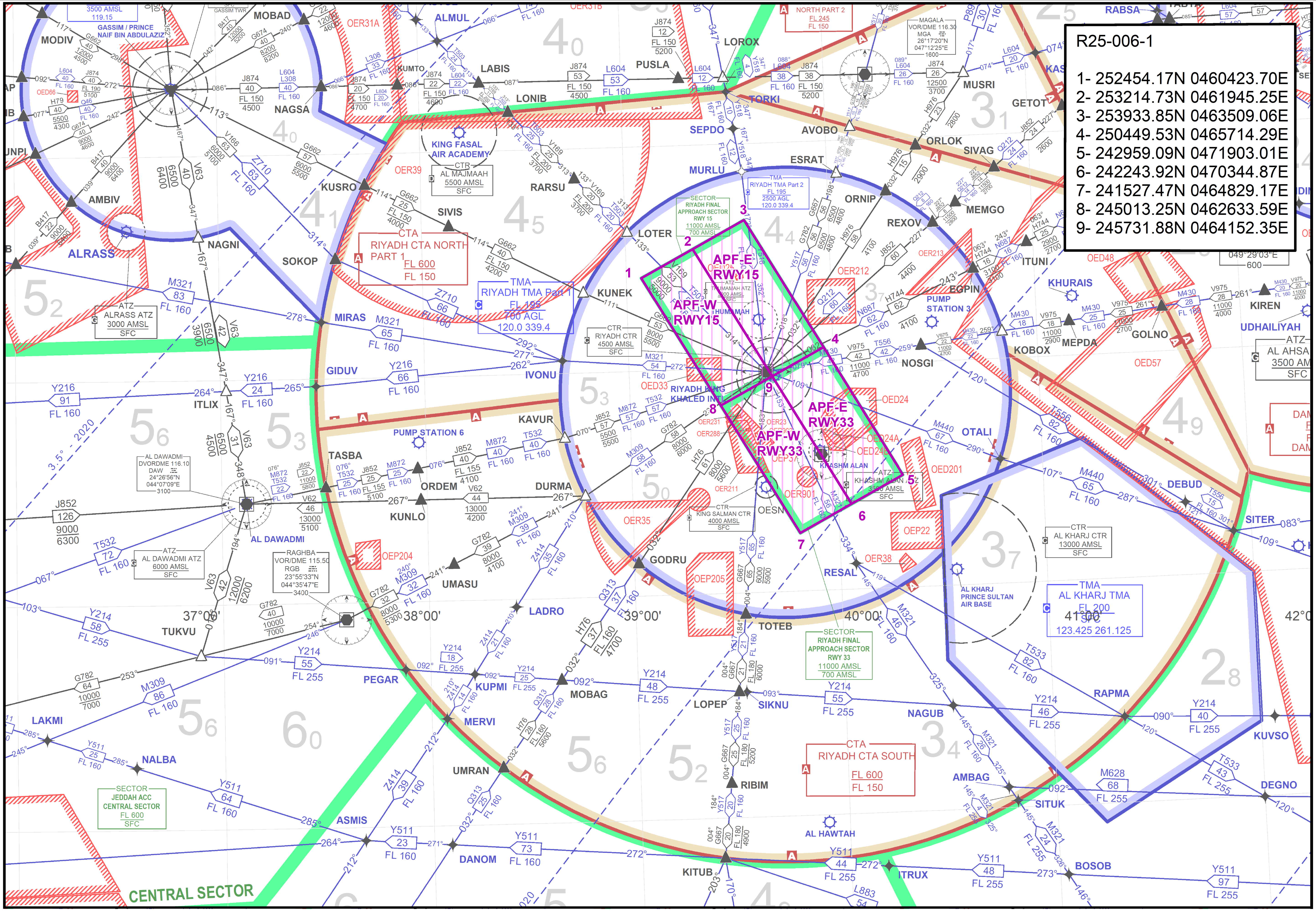
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7- 241527.47N 0464829.17E
8- 245013.25N 0462633.59E
9- 245731.88N 0464152.35E
APF-E RWY15
APF-W RWY15
APF-E RWY33
APF-W RWY33
RIYADH KING KHALED INTL
CTA RIYADH CTA NORTH PART 1 FL 600 FL 150
CTA RIYADH CTA SOUTH FL 600 FL 150
TMA RIYADH TMA Part 1 FL 195 700 AGL 120.0 339.4
TMA RIYADH TMA Part 2 FL 195 2500 AGL 120.0 339.4
SECTOR RIYADH FINAL APPROACH SECTOR RWY 15 11000 AMSL 700 AMSL
SECTOR RIYADH FINAL APPROACH SECTOR RWY 33 11000 AMSL 700 AMSL
CTR RIYADH CTR 4500 AMSL SFC
CTR KING SALMAN CTR 4000 AMSL SFC
CTR AL MAJMAAH 5500 AMSL SFC
CTR AL KHARJ CTR 13000 AMSL SFC
TMA AL KHARJ TMA FL 200 123.425 261.125
ATZ KHASHM ALAN 3500 AMSL SFC
ATZ AL DAWADMI ATZ 6000 AMSL SFC
ATZ ALRASS ATZ 3000 AMSL SFC
ATZ AL AHSA 3500 AMSL SFC
AL DAWADMI DVORDME 116.10 DAW 24°26'56"N 044°07'09"E 3100
RAGHBA VOR/DME 115.50 RGB 23°55'33"N 044°35'47"E 3400
MAGALA VOR/DME 116.30 MGA 26°17'20"N 047°12'25"E 1600
NORTH PART 2 FL 245 FL 150
SECTOR JEDDAH ACC CENTRAL SECTOR FL 600 SFC
CENTRAL SECTOR
KING FASAL AIR ACADEMY
AL KHARJ PRINCE SULTAN AIR BASE
PUMP STATION 6
PUMP STATION 3
AL HAWTAH
GASSIM / PRINCE NAIF BIN ABDULAZIZ 3500 AMSL 119.15
MODIV MOBAD ALMUL LABIS LONIB PUSLA LOROX TORKI SEPDO AVOBO MUSRI GETOT ORLOK SIVAG RABSA NAGSA KUMTO AMBIV ALRASS NAGNI SOKOP KUSRO SIVIS RARSU MURLU ESRAT ORNIP REXOV MEMGO LOTER KUNEK ITUNI EGPIN KHURAIS KIREN UDHAILIYAH GOLNO MEPDA KOBOX NOSGI MIRAS GIDUV IVONU ITLIX KAVUR OTALI DEBUD SITER TASBA ORDEM DURMA KUNLO AL DAWADMI GODRU RESAL UMASU LADRO TUKVU TOTEB PEGAR KUPMI MOBAG LOPEP SIKNU NAGUB RAPMA KUVSO LAKMI NALBA MERVI UMRAN ASMIS DANOM RIBIM AMBAG SITUK DEGNO KITUB ITRUX BOSOB OESN
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