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**AIRAC AIP
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**SUBANG / SULTAN ABDUL AZIZ SHAH AIRPORT (WMSA)
 REVISED OF INSTRUMENT FLIGHT PROCEDURES
 FOR RUNWAY 15 AND RUNWAY 33**

1 INTRODUCTION

- 1.1 The purpose of this AIP Supplement is to notify the aviation industry of the changes of Instrument Flight Procedures (IFP) for Sultan Abdul Aziz Shah Airport (WMSA).
- 1.2 New radio navigation aid and Localizer (LOC) installations for the Instrument Landing System at WMSA have been completed. The equipment is co-located on-site, whereas the Glide Path/ Distance Measuring Equipment (GP/DME) has been relocated a few meters from its original position.
- 1.3 Following the replacement of navigation aids, a review of WMSA's IFP was essential to align with the updated navigation aid locations and consider the latest obstacle data around the aerodrome.

2 LOCATION AND DETAILS OF NEW RADIO NAVIGATION AID

- 2.1 The location and details of the new replaced navigation aids are as follows:

| Type of aid, CAT of ILS | ID | Frequency | Hours of operation | Position of transmitting antenna coordinates | Elevation of DME antenna | Remarks |
|----------------------------|-----|-------------------|-----------------------|---|--------------------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| ILS/LOC | ISB | 110.3 MHz | H24 | 030652.86N 1013331.40E | 99.90 ft / 30.45 m | LOC - 25 Watt |
| GP/DME | ISB | 335 MHz 40X | | 030832.32N 1013228.62E | 112.17 ft / 34.19 m | RDH:54FT GP - 5 Watt DME - 100 Watt |
| NDB | CE | 205KHz | | 031744.70N 1012707.25E | | 149° MAG / 11.4NM fm ARP 50W |
| DVOR/DME | VBA | 114.7MHz CH94X | | 031929.37N 1012738.11E | | En-route and Terminal |

3 REVISED INSTRUMENT FLIGHT PROCEDURES

3.1 The new revised Standard Instrument Departure Procedures (SID) charts are as follows:

- APPENDIX A-1 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RADAR DEPARTURES
- APPENDIX A-2 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RNAV (GNSS) RWY 15 BIKDU 3L PIBOS 3L RUSBU 3L MITOS 3L SALAX 3L
PUGER 3L IBUKU 3L ATIMU 3L
- APPENDIX A-3 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RWY 15 PULIP 2L PIBOS 2L BATAR 2L MITOS 2L SALAX 2L PUGER 2L
SUKAT 2L
- APPENDIX A-4 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RWY 33 PULIP 2N PIBOS 2N BATAR 2N MITOS 2N SALAX 2N PUGER 2N
SUKAT 2N

3.2 The new revised Standard Instrument Arrival Procedures (STAR) charts are as follows:

- APPENDIX B-1 STANDARD ARRIVAL CHART INSTRUMENT – ICAO –
RNAV 1 (GNSS) RWY 15 PUGER 2M NIREN 2M KAKAK 2M PULIP 2M
SAROX 2M GUPTA 2M SALAX 2M

3.3 The new revised Instrument Approach Procedures charts are as follows:

- APPENDIX C-1 INSTRUMENT APPROACH CHART - ICAO – ILS or LOC RWY 15
- APPENDIX C-2 INSTRUMENT APPROACH CHART - ICAO – NDB RWY 15
- APPENDIX C-3 INSTRUMENT APPROACH CHART - ICAO – RNP Y RWY 15
- APPENDIX C-4 INSTRUMENT APPROACH CHART - ICAO – RNP Y RWY 33

3.4 The following charts pertaining to Sultan Abdul Aziz Shah Airport will be superseded:

- AD 2-WMSA-6-1 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RADAR DEPARTURES
- AD 2-WMSA-6-3 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RWY 15 RNAV (GNSS) BIKDU 1L PIBOS 1L KIMAT 1L RUSBU 1L MITOS 1L
SALAX 1L PUGER 1L IBUKU 1L ATIMU 1L
- AD 2-WMSA-6-7 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RWY 15 PULIP 2L PIBOS 2L KIMAT 2L BATAR 2L MITOS 2L SALAX 2L
PUGER 2L SUKAT 2L
- AD 2-WMSA-6-9 STANDARD DEPARTURE CHART INSTRUMENT – ICAO –
RWY 33 PULIP 2N PIBOS 2N KIMAT 2N BATAR 2N MITOS 2N SALAX 2N
PUGER 2N SUKAT 2N
- AD 2-WMSA-7-3 STANDARD ARRIVAL CHART INSTRUMENT – ICAO –
RWY 15 RNAV 1 (GNSS) PUGER 1M NIREN 1M KAKAK 1M PULIP 1M
SAROX 1M GUPTA 1M SALAX 1M
- AD 2-WMSA-8-1 INSTRUMENT APPROACH CHART - ICAO – ILS or LOC RWY 15
- AD 2-WMSA-8-3 INSTRUMENT APPROACH CHART - ICAO – NDB RWY 15
- AD 2-WMSA-8-5 INSTRUMENT APPROACH CHART - ICAO – RNP Y RWY 15
- AD 2-WMSA-8-7 INSTRUMENT APPROACH CHART - ICAO – RNP Y RWY 33

4 WAYPOINTS

4.1 The following new waypoints are established:

| No. | Waypoint | Latitude | Longitude | Phase of Flight |
|-----|----------|------------------|-------------------|-----------------|
| 1 | SA616 | 02° 59' 31.41" N | 101° 37' 49.99" E | APPROACH |
| 2 | SA617 | 02° 56' 27.84" N | 101° 32' 39.89" E | APPROACH |
| 3 | SA618 | 02° 59' 54.23" N | 101° 30' 39.03" E | APPROACH |
| 4 | SA619 | 03° 06' 49.87" N | 101° 26' 35.65" E | APPROACH |
| 5 | SA641 | 03° 02' 37.41" N | 101° 36' 01.08" E | SID |
| 6 | SA642 | 02° 58' 32.65" N | 101° 29' 07.64" E | SID |
| 7 | SA643 | 02° 59' 22.03" N | 101° 17' 09.64" E | SID |
| 8 | SA644 | 03° 05' 25.67" N | 101° 40' 45.34" E | SID |
| 9 | SA645 | 03° 07' 43.31" N | 101° 44' 37.94" E | SID |

4.2 The following waypoints will be removed

| No. | Waypoint | Latitude | Longitude | Phase of Flight |
|-----|----------|------------------|-------------------|-----------------|
| 1 | SA614 | 02° 58' 55.97" N | 101° 38' 10.79" E | APPROACH |
| 2 | SA631 | 03° 03' 55.45" N | 101° 35' 15.37" E | SID |
| 3 | SA632 | 02° 59' 42.70" N | 101° 28' 08.63" E | SID |
| 4 | SA633 | 02° 59' 53.59" N | 101° 17' 51.45" E | SID |
| 5 | SA634 | 03° 08' 24.82" N | 101° 44' 15.46" E | SID |
| 6 | SA640 | 03° 06' 21.65" N | 101° 40' 08.48" E | SID |

5 IMPLEMENTATION DATE

5.1 This AIP Supplement and relevant charts will become effective at 0001UTC on 21th March 2024.

6 CANCELLATION

6.1 If there are no major changes required, this AIP Supplement will remain until the information is published in AIP Malaysia.

- END -

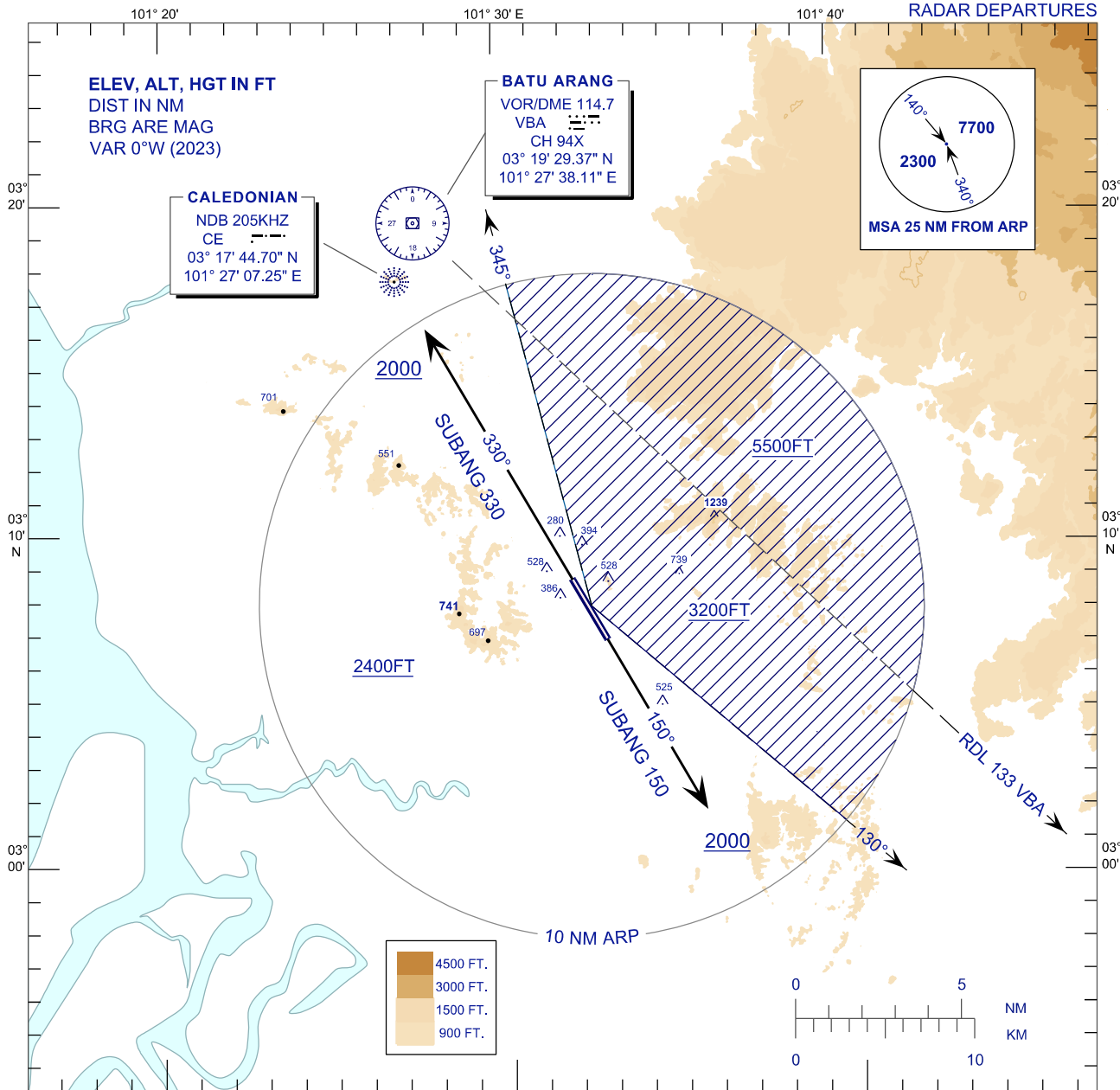
**STANDARD DEPARTURE CHART
INSTRUMENT (SID)**

TRANSITION ALTITUDE
11000FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)**

RADAR DEPARTURES



RWY 15 - SUBANG 150

AFTER TAKE-OFF PROCEED ON TR 150° UNTIL PASSING 2000FT, THEN FOLLOW THE ASSIGNED HEADING.

NOTE:

1. MINIMUM CLIMB GRADIENT 5.5% UNTIL PASSING 2000 FT.
2. TURN BEFORE DER IS NOT ALLOWED.

RWY 33 - SUBANG 330

AFTER TAKE-OFF PROCEED ON TR 330° UNTIL PASSING 2000FT, THEN FOLLOW THE ASSIGNED HEADING.

NOTE:

1. TURN BEFORE DER IS NOT ALLOWED.

REMARKS :

1. ASSIGNED HEADING (AND LEVEL IF APPLICABLE) WILL BE ISSUED WITH TAKE-OFF CLEARANCE.
2. USE 5.5% CLIMB GRADIENT FROM LIFT-OFF UNTIL PASSING 5500FT IF ASSIGNED HEADING WILL TAKE AIRCRAFT INTO HATCHED SECTOR.

CHANGES : REVISE PDG, COORDINATE OF VBA & CE.

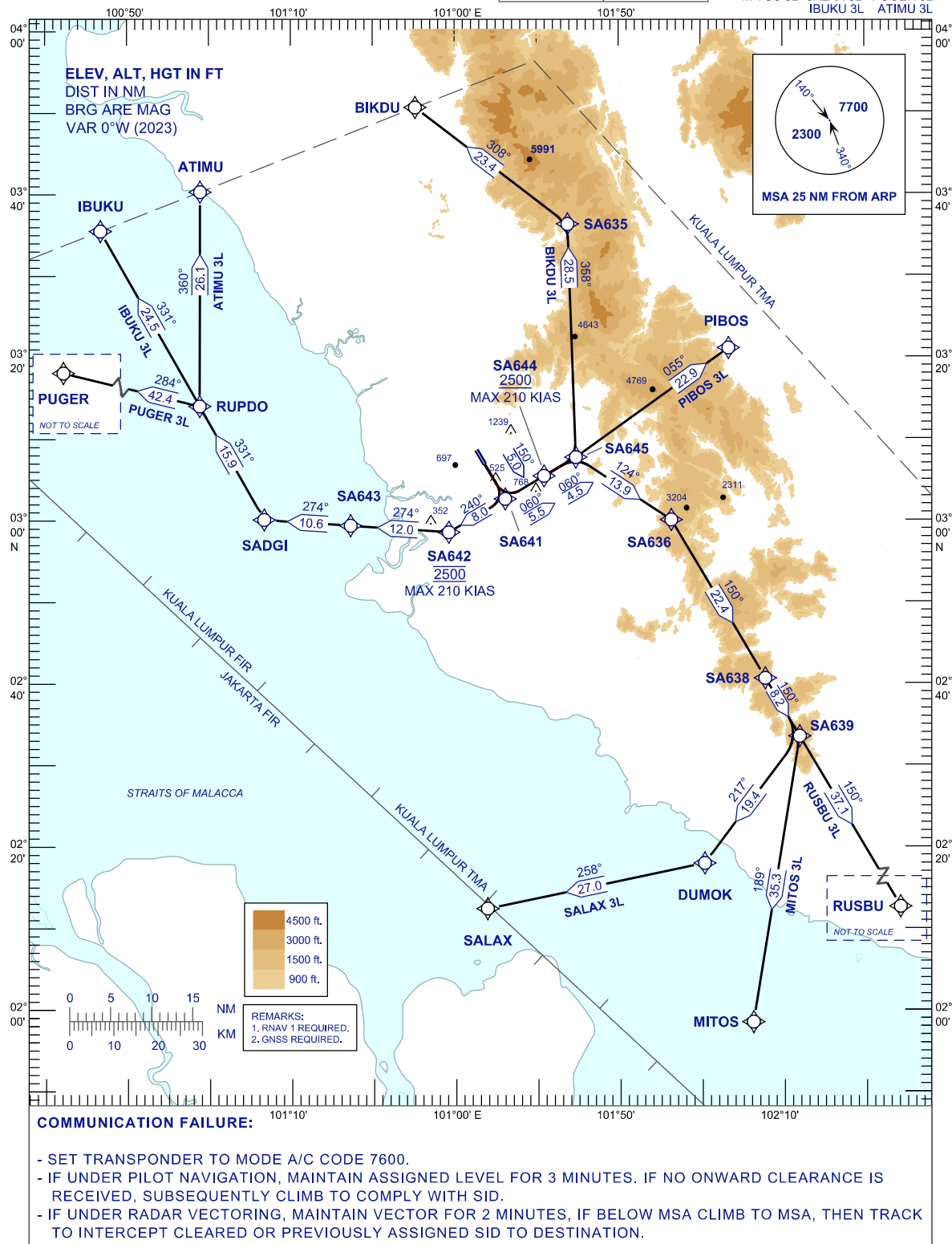
**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RYWY 15**

BIKDU 3L PIBOS 3L RUSBU 3L
MITOS 3L SALAX 3L PUGER 3L
IBUKU 3L ATIMU 3L



**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**
BIKDU 3L PIBOS 3L RUSBU 3L
MITOS 3L SALAX 3L PUGER 3L
IBUKU 3L ATIMU 3L

TABULAR DESCRIPTION

BIKDU THREE LIMA DEPARTURE (BIKDU 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA644 | - | 060° | - | 5.5 | L | +2500 | -210 | RNAV 1 |
| TF | SA645 | - | 060° | - | 4.5 | - | - | - | RNAV 1 |
| TF | SA635 | - | 358° | - | 28.5 | L | - | - | RNAV 1 |
| TF | BIKDU | - | 308° | - | 23.4 | L | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL PASSING 5500FT DUE TO OBSTACLE.

PIBOS THREE LIMA DEPARTURE (PIBOS 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA644 | - | 060° | - | 5.5 | L | +2500 | -210 | RNAV 1 |
| TF | SA645 | - | 060° | - | 4.5 | - | - | - | RNAV 1 |
| TF | PIBOS | - | 055° | - | 22.9 | - | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL PASSING 5500FT DUE TO OBSTACLE.

RUSBU THREE LIMA DEPARTURE (RUSBU 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA644 | - | 060° | - | 5.5 | L | +2500 | -210 | RNAV 1 |
| TF | SA645 | - | 060° | - | 4.5 | - | - | - | RNAV 1 |
| TF | SA636 | - | 124° | - | 13.9 | R | - | - | RNAV 1 |
| TF | SA638 | - | 150° | - | 22.4 | R | - | - | RNAV 1 |
| TF | SA639 | - | 150° | - | 8.2 | - | - | - | RNAV 1 |
| TF | RUSBU | - | 150° | - | 37.1 | - | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL SA644 DUE TO OBSTACLE.

MITOS THREE LIMA DEPARTURE (MITOS 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA644 | - | 060° | - | 5.5 | L | +2500 | -210 | RNAV 1 |
| TF | SA645 | - | 060° | - | 4.5 | - | - | - | RNAV 1 |
| TF | SA636 | - | 124° | - | 13.9 | R | - | - | RNAV 1 |
| TF | SA638 | - | 150° | - | 22.4 | R | - | - | RNAV 1 |
| TF | SA639 | - | 150° | - | 8.2 | - | - | - | RNAV 1 |
| TF | MITOS | - | 189° | - | 35.3 | R | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL SA644 DUE TO OBSTACLE.

CHANGES : CHART REPLACEMENT - REVISED PDG & REMOVAL KIMAT DEPARTURE.
ESTABLISH NEW WPT - SA641, SA642, SA643, SA644, SA645.
REMOVAL WPT - SA631, SA632, SA633, SA634, SA637, SA640.

**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV Rwy 15**

BIKDU 3L PIBOS 3L RUSBU 3L
MITOS 3L SALAX 3L PUGER 3L
IBUKU 3L ATIMU 3L

TABULAR DESCRIPTION

SALAX THREE LIMA DEPARTURE (SALAX 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA644 | - | 060° | - | 5.5 | L | +2500 | -210 | RNAV 1 |
| TF | SA645 | - | 060° | - | 4.5 | - | - | - | RNAV 1 |
| TF | SA636 | - | 124° | - | 13.9 | R | - | - | RNAV 1 |
| TF | SA638 | - | 150° | - | 22.4 | R | - | - | RNAV 1 |
| TF | SA639 | - | 150° | - | 8.2 | - | - | - | RNAV 1 |
| TF | DUMOK | - | 217° | - | 19.4 | R | - | - | RNAV 1 |
| TF | SALAX | - | 258° | - | 27.0 | R | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL SA644 DUE TO OBSTACLE.

PUGER THREE LIMA DEPARTURE (PUGER 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA642 | - | 240° | - | 8.0 | R | @2500 | -210 | RNAV 1 |
| TF | SA643 | - | 274° | - | 12.0 | R | - | - | RNAV 1 |
| TF | SADGI | - | 274° | - | 10.6 | - | - | - | RNAV 1 |
| TF | RUPDO | - | 331° | - | 15.9 | R | - | - | RNAV 1 |
| TF | PUGER | - | 284° | - | 42.4 | L | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL 2500FT DUE TO OBSTACLE.

IBUKU THREE LIMA DEPARTURE (IBUKU 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA642 | - | 240° | - | 8.0 | R | @2500 | -210 | RNAV 1 |
| TF | SA643 | - | 274° | - | 12.0 | R | - | - | RNAV 1 |
| TF | SADGI | - | 274° | - | 10.6 | - | - | - | RNAV 1 |
| TF | RUPDO | - | 331° | - | 15.9 | R | - | - | RNAV 1 |
| TF | IBUKU | - | 331° | - | 24.5 | - | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL 2500FT DUE TO OBSTACLE.

ATIMU THREE LIMA DEPARTURE (ATIMU 3L)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| CF | SA641 | - | 150° | - | 5.0 | - | - | - | RNAV 1 |
| TF | SA642 | - | 240° | - | 8.0 | R | @2500 | -210 | RNAV 1 |
| TF | SA643 | - | 274° | - | 12.0 | R | - | - | RNAV 1 |
| TF | SADGI | - | 274° | - | 10.6 | - | - | - | RNAV 1 |
| TF | RUPDO | - | 331° | - | 15.9 | R | - | - | RNAV 1 |
| TF | ATIMU | - | 360° | - | 26.1 | R | - | - | RNAV 1 |

MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL 2500FT DUE TO OBSTACLE.

CHANGES : CHART REPLACEMENT - REVISED PDG & REMOVAL KIMAT DEPARTURE.
ESTABLISH NEW WPT - SA641, SA642, SA643, SA644, SA645.
REMOVAL WPT - SA631, SA632, SA633, SA634, SA637, SA640.

**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

BIKDU 3L PIBOS 3L RUSBU 3L
MITOS 3L SALAX 3L PUGER 3L
IBUKU 3L ATIMU 3L

WAYPOINT LIST

| WAYPOINT IDENTIFIER | COORDINATE | |
|---------------------|------------------|-------------------|
| ATIMU | 03° 40' 17.56" N | 100° 58' 52.25" E |
| BIKDU | 03° 50' 37.38" N | 101° 25' 07.73" E |
| DUMOK | 02° 17' 57.12" N | 102° 00' 15.12" E |
| IBUKU | 03° 35' 29.81" N | 100° 46' 41.87" E |
| MITOS | 01° 58' 30.00" N | 102° 06' 10.08" E |
| PIBOS | 03° 21' 06.12" N | 102° 03' 15.84" E |
| PUGER | 03° 23' 59.00" N | 100° 17' 31.00" E |
| RUPDO | 03° 14' 01.81" N | 100° 58' 47.14" E |
| RUSBU | 02° 01' 22.72" N | 102° 30' 42.11" E |
| SALAX | 02° 12' 24.12" N | 101° 33' 47.88" E |
| SADGI | 03° 00' 05.37" N | 101° 06' 38.01" E |
| SA635 | 03° 36' 17.86" N | 101° 43' 40.58" E |
| SA636 | 03° 00' 02.21" N | 101° 56' 14.79" E |
| SA638 | 02° 40' 37.14" N | 102° 07' 39.56" E |
| SA639 | 02° 33' 31.40" N | 102° 11' 49.68" E |
| SA641 | 03° 02' 37.41" N | 101° 36' 01.08" E |
| SA642 | 02° 58' 32.65" N | 101° 29' 07.64" E |
| SA643 | 02° 59' 22.03" N | 101° 17' 09.64" E |
| SA644 | 03° 05' 25.67" N | 101° 40' 45.34" E |
| SA645 | 03° 07' 43.31" N | 101° 44' 37.94" E |

CHANGES : CHART REPLACEMENT - REVISED PDG & REMOVAL KIMAT DEPARTURE.
ESTABLISH NEW WPT - SA641, SA642, SA643, SA644, SA645.
REMOVAL WPT - SA631, SA632, SA633, SA634, SA637, SA640.

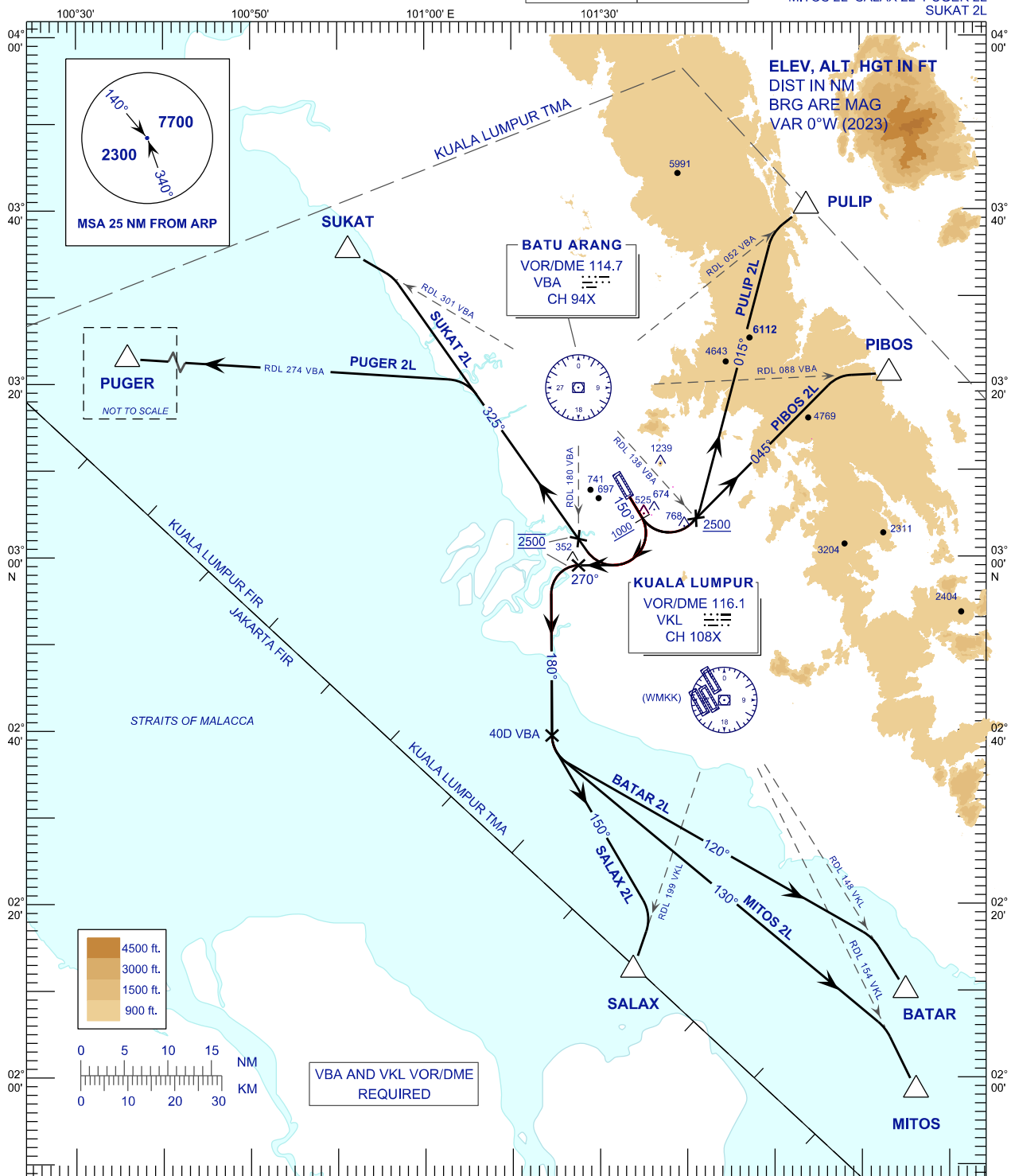
**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RWY 15**

PULIP 2L PIBOS 2L BATAR 2L
MITOS 2L SALAX 2L PUGER 2L
SUKAT 2L



**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

 TRANSITION ALTITUDE
11000FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RWY 15**

 PULIP 2L PIBOS 2L BATAR 2L
MITOS 2L SALAX 2L PUGER 2L
SUKAT 2L

TABULAR DESCRIPTION

| INITIAL CLIMB PROCEDURE | SID DESIGNATOR | SID DESCRIPTION |
|---|-------------------------------------|---|
| AFTER TAKE-OFF PROCEED ON TR 150°, ON PASSING 1000FT TURN LEFT. NOTE: 1. MINIMUM CLIMB GRADIENT (PDG) 5.5% UNTIL PASSING 5500FT DUE TO OBSTACLE AND FOR ATC PURPOSES. 2. REQUIREMENT TO CROSS RADIAL 138° VBA VOR/DME AT 2500FT OR ABOVE . | PULIP TWO LIMA DEPARTURE (PULIP 2L) | TRACK 015° TO INTERCEPT RADIAL 052° VBA VOR/DME, OUTBOUND TO PULIP. |
| | PIBOS TWO LIMA DEPARTURE (PIBOS 2L) | TRACK 045° TO INTERCEPT RADIAL 088° VBA VOR/DME, OUTBOUND TO PIBOS. |
| AFTER TAKE-OFF PROCEED ON TR 150°, ON PASSING 1000FT TURN RIGHT ON TR 270°. AT RADIAL 180° VBA VOR/DME TURN LEFT ON TR 180°. | BATAR TWO LIMA DEPARTURE (BATAR 2L) | AT 40 DME VBA VOR/DME, TURN LEFT ON TR 120° TO INTERCEPT RADIAL 148° VKL VOR/DME OUTBOUND TO BATAR. |
| | MITOS TWO LIMA DEPARTURE (MITOS 2L) | AT 40 DME VBA VOR/DME, TURN LEFT ON TR 130° TO INTERCEPT RADIAL 154° VKL VOR/DME OUTBOUND TO MITOS. |
| | SALAX TWO LIMA DEPARTURE (SALAX 2L) | AT 40 DME VBA VOR/DME, TURN LEFT ON TR 150° TO INTERCEPT RADIAL 199° VKL VOR/DME OUTBOUND TO SALAX. |
| AFTER TAKE-OFF PROCEED ON TR 150°, ON PASSING 1000FT TURN RIGHT ON TR 325°. | PUGER TWO LIMA DEPARTURE (PUGER 2L) | INTERCEPT RADIAL 274° VBA VOR/DME OUTBOUND TO PUGER. |
| | SUKAT TWO LIMA DEPARTURE (SUKAT 2L) | INTERCEPT RADIAL 301° VBA VOR/DME OUTBOUND TO SUKAT. |

WAYPOINT LIST

| WAYPOINT / NAVAID/ FIX | NAVAID FREQUENCY / CROSS REFERENCE FROM NAVAID | COORDINATE |
|------------------------|--|------------------------------------|
| VBA VOR/DME | 114.7 MHZ / CH94X | 03° 19' 29.37" N 101° 27' 38.11" E |
| VKL VOR/DME | 116.1 MHZ / CH 108X | 02° 43' 28.00" N 101° 44' 17.00" E |
| BATAR | RDL 148 VKL / 39.2 DME VKL | 02° 10' 00.12" N 102° 04' 59.88" E |
| MITOS | RDL 154 VKL / 49.8 DME VKL | 01° 58' 30.00" N 102° 06' 10.08" E |
| PIBOS | RDL 088 VBA / 35.7 DME VBA | 03° 21' 06.12" N 102° 03' 15.84" E |
| PUGER | RDL 274 VBA / 70.3 DME VBA | 03° 23' 59.00" N 100° 17' 31.00" E |
| PULIP | RDL 052 VBA / 33.4 DME VBA | 03° 40' 23.88" N 101° 53' 48.12" E |
| SALAX | RDL 199 VKL / 32.7 DME VKL | 02° 12' 24.12" N 101° 33' 47.88" E |
| SUKAT | RDL 301 VBA / 30.8 DME VBA | 03° 35' 25.08" N 101° 01' 12.00" E |

CHANGES : OBSTACLE UPDATE, REVISED PDG, VBA COORDINATE & REMOVAL KIMAT DEPARTURE.

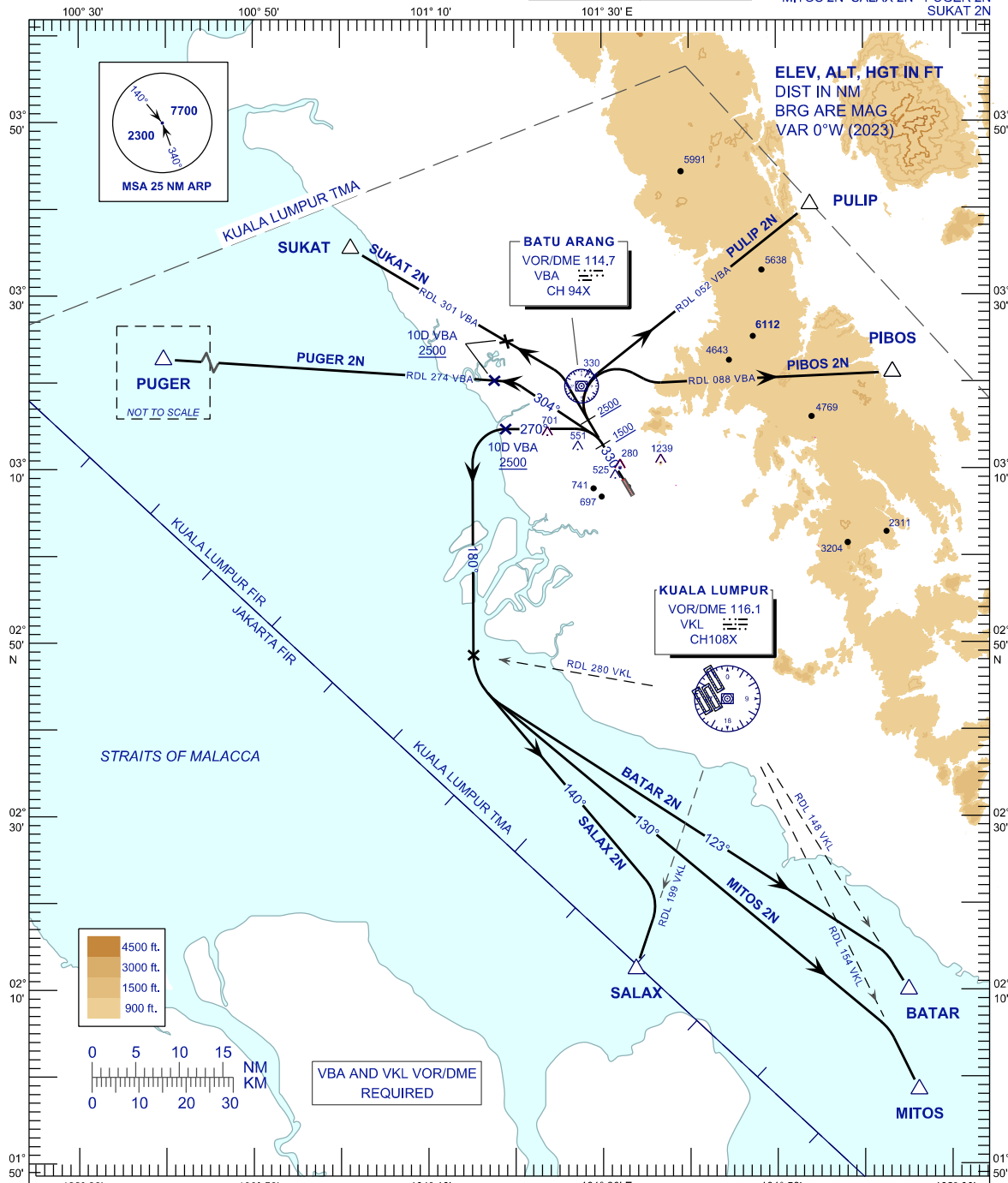
**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RWY 33**

PULIP 2N PIBOS 2N BATAR 2N
MITOS 2N SALAX 2N PUGER 2N
SUKAT 2N



COMMUNICATION FAILURE:

- SET TRANSPONDER TO MODE A/C CODE 7600.
- IF UNDER PILOT NAVIGATION, MAINTAIN ASSIGNED LEVEL FOR 3 MINUTES. IF NO ONWARD CLEARANCE IS RECEIVED, SUBSEQUENTLY CLIMB TO COMPLY WITH SID.
- IF UNDER RADAR VECTORED, MAINTAIN VECTOR FOR 2 MINUTES, IF BELOW MSA CLIMB TO MSA, THEN TRACK TO INTERCEPT CLEARED OR PREVIOUSLY ASSIGNED SID TO DESTINATION.

CHANGES: UPDATED OBSTACLE, VBA COORDINATE & REMOVAL KIMAT DEPARTURE.

**STANDARD DEPARTURE CHART
INSTRUMENT (SID) - ICAO**

TRANSITION ALTITUDE
11000FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RWY 33**

PULIP 2N PIBOS 2N BATAR 2N
MITOS 2N SALAX 2N PUGER 2N
SUKAT 2N

TABULAR DESCRIPTION

| INITIAL CLIMB PROCEDURE | SID DESIGNATOR | SID DESCRIPTION |
|---|---|--|
| AFTER TAKE-OFF PROCEED ON TR 330°, ON PASSING 2500FT TURN RIGHT. NOTE : 1. MINIMUM CLIMB GRADIENT (PDG) 5% UNTIL PASSING 5500FT DUE TO OBSTACLE. | PULIP TWO NOVEMBER DEPARTURE (PULIP 2N) | INTERCEPT RADIAL 052° VBA VOR/DME, OUTBOUND TO PULIP. |
| | PIBOS TWO NOVEMBER DEPARTURE (PIBOS 2N) | INTERCEPT RADIAL 088° VBA VOR/DME, OUTBOUND TO PIBOS. |
| AFTER TAKE-OFF PROCEED ON TR 330°, ON PASSING 1500FT TURN LEFT TR 270°. AT 10 DME VBA VOR/DME, TURN LEFT ON TR 180°. NOTE : 1. MINIMUM CLIMB GRADIENT (PDG) 5% UNTIL PASSING 2500FT FOR ATC PURPOSES. 2. REQUIREMENT TO CROSS 10 DME VBA VOR/DME AT 2500FT OR ABOVE. | BATAR TWO NOVEMBER DEPARTURE (BATAR 2N) | AT RADIAL 280° VKL VOR/DME, TURN LEFT ON TR 123° TO INTERCEPT RADIAL 148° VKL VOR/DME OUTBOUND TO BATAR. |
| | MITOS TWO NOVEMBER DEPARTURE (MITOS 2N) | AT RADIAL 280° VKL VOR/DME, TURN LEFT ON TR 130° TO INTERCEPT RADIAL 154° VKL VOR/DME OUTBOUND TO MITOS. |
| | SALAX TWO NOVEMBER DEPARTURE (SALAX 2N) | AT RADIAL 280° VKL VOR/DME, TURN LEFT ON TR 140° TO INTERCEPT RADIAL 199° VKL VOR/DME OUTBOUND TO SALAX. |
| AFTER TAKE-OFF PROCEED ON TR 330°. NOTE : 1. MINIMUM CLIMB GRADIENT (PDG) 5% UNTIL PASSING 2500FT FOR ATC PURPOSES. 2. REQUIREMENT TO CROSS 10 DME VBA VOR/DME AT 2500FT OR ABOVE. | PUGER TWO NOVEMBER DEPARTURE (PUGER 2N) | ON PASSING 1500FT, TURN LEFT TR 304° TO INTERCEPT RADIAL 274° VBA VOR/DME, OUTBOUND TO PUGER. |
| | SUKAT TWO NOVEMBER DEPARTURE (SUKAT 2N) | ON PASSING 1500FT CONTINUE ON TR330°, THEN INTERCEPT RADIAL 301° VBA VOR/DME, OUTBOUND TO SUKAT. |

WAYPOINT LIST

| WAYPOINT/ NAVAID/FIX | NAVAID FREQUENCY/ CROSS REFERENCE FROM NAVAID | COORDINATE (WGS84) |
|-------------------------|--|------------------------------------|
| VBA VOR/DME | 114.7 MHZ / CH94X | 03° 19' 29.37" N 101° 27' 38.11" E |
| VKL VOR/DME | 116.1 MHZ / CH 108X | 02° 43' 28.00" N 101° 44' 17.00" E |
| BATAR | RDL 148 VKL / 39.2 DME VKL | 02° 10' 00.12" N 102° 04' 59.88" E |
| MITOS | RDL 154 VKL / 49.8 DME VKL | 01° 58' 30.00" N 102° 06' 10.08" E |
| PIBOS | RDL 088 VBA / 35.7 DME VBA | 03° 21' 06.12" N 102° 03' 15.84" E |
| PUGER | RDL 274 VBA / 70.3 DME VBA | 03° 23' 59.00" N 100° 17' 31.00" E |
| PULIP | RDL 052 VBA / 33.4 DME VBA | 03° 40' 23.88" N 101° 53' 48.12" E |
| SALAX | RDL 199 VKL / 32.7 DME VKL | 02° 12' 24.12" N 101° 33' 47.88" E |
| SUKAT | RDL 301 VBA / 30.8 DME VBA | 03° 35' 25.08" N 101° 01' 12.00" E |

CHANGES: UPDATED OBSTACLE, VBA COORDINATE & REMOVAL KIMAT DEPARTURE.

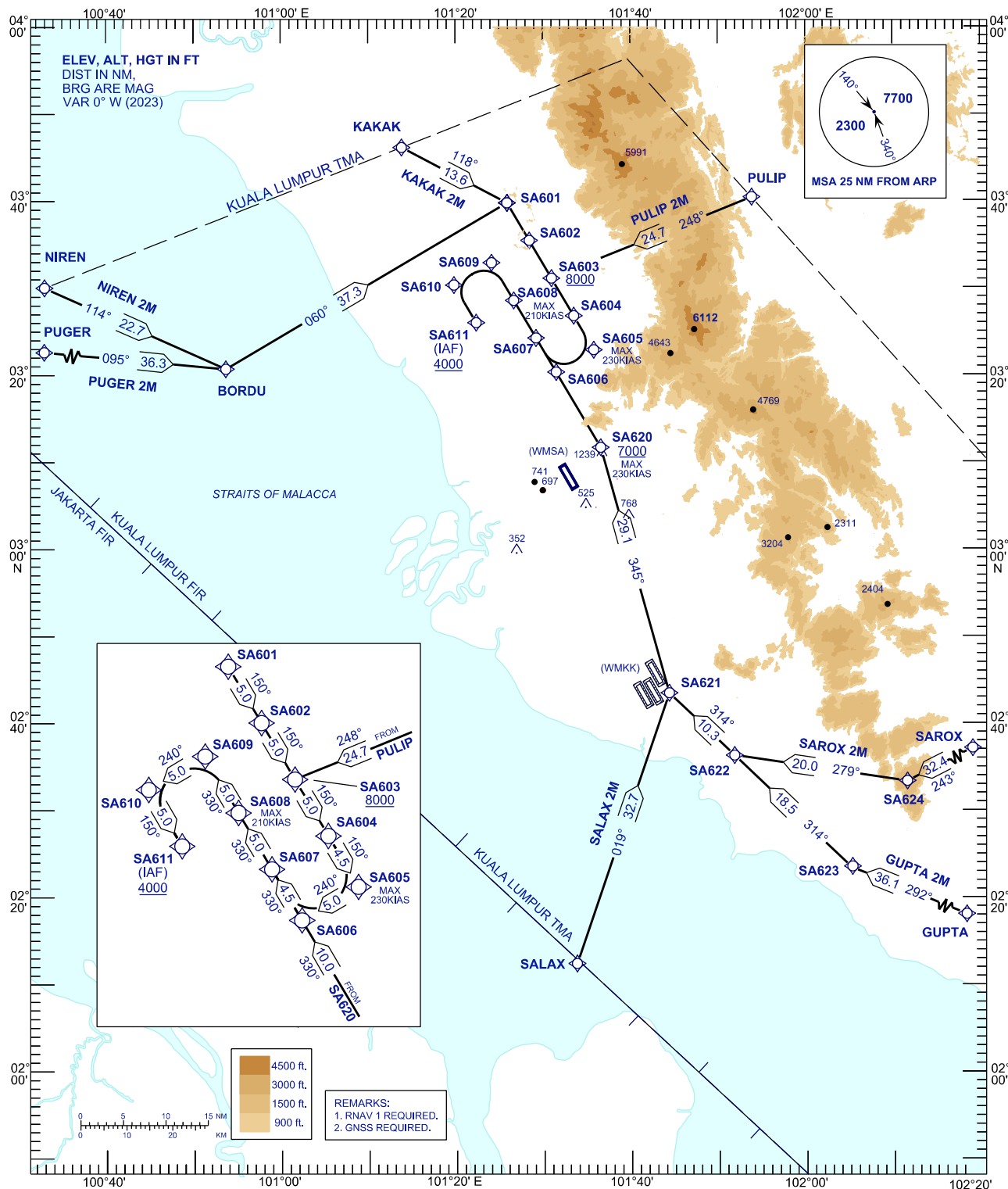
**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**

TRANSITION ALTITUDE
11000FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV Rwy 15**

PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M



**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

TRANSITION ALTITUDE
11000 FT

PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M

TABULAR DESCRIPTION

PUGER TWO MIKE ARRIVAL (PUGER 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | PUGER | - | - | - | - | - | - | - | RNAV1 |
| TF | BORDU | - | 095° | - | 36.3 | - | - | - | RNAV1 |
| TF | SA601 | - | 060° | - | 37.3 | L | - | - | RNAV1 |
| TF | SA602 | - | 150° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA603 | - | 150° | - | 5.0 | - | + 8000 | - | RNAV1 |
| TF | SA604 | - | 150° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA605 | - | 150° | - | 4.5 | - | - | - 230 | RNAV1 |
| TF | SA606 | - | 240° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | R | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

NIREN TWO MIKE ARRIVAL (NIREN 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | NIREN | - | - | - | - | - | - | - | RNAV1 |
| TF | BORDU | - | 114° | - | 22.7 | - | - | - | RNAV1 |
| TF | SA601 | - | 060° | - | 37.3 | L | - | - | RNAV1 |
| TF | SA602 | - | 150° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA603 | - | 150° | - | 5.0 | - | + 8000 | - | RNAV1 |
| TF | SA604 | - | 150° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA605 | - | 150° | - | 4.5 | - | - | - 230 | RNAV1 |
| TF | SA606 | - | 240° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | R | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

CHANGES: REMOVAL WPT SA612

**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

TRANSITION ALTITUDE
11000 FT

PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M

KAKAK TWO MIKE ARRIVAL (KAKAK 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | KAKAK | - | - | - | - | - | - | - | RNAV1 |
| TF | SA601 | - | 118° | - | 13.6 | - | - | - | RNAV1 |
| TF | SA602 | - | 150° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA603 | - | 150° | - | 5.0 | - | + 8000 | - | RNAV1 |
| TF | SA604 | - | 150° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA605 | - | 150° | - | 4.5 | - | - | - 230 | RNAV1 |
| TF | SA606 | - | 240° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | R | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

PULIP TWO MIKE ARRIVAL (PULIP 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | PULIP | - | - | - | - | - | - | - | RNAV1 |
| TF | SA603 | - | 248° | - | 24.7 | - | + 8000 | - | RNAV1 |
| TF | SA604 | - | 150° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA605 | - | 150° | - | 4.5 | - | - | - 230 | RNAV1 |
| TF | SA606 | - | 240° | - | 5.0 | R | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | R | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

CHANGES: REMOVAL WPT SA612

**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**
**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

 TRANSITION ALTITUDE
11000 FT

 PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M

SAROX TWO MIKE ARRIVAL (SAROX 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | SAROX | - | - | - | - | - | - | - | RNAV1 |
| TF | SA624 | - | 243° | - | 32.4 | - | - | - | RNAV1 |
| TF | SA622 | - | 279 | - | 20.0 | R | - | - | RNAV1 |
| TF | SA621 | - | 314 | - | 10.3 | R | - | - | RNAV1 |
| TF | SA620 | - | 345° | - | 29.1 | R | + 7000 | - 230 | RNAV1 |
| TF | SA606 | - | 330° | - | 10.0 | L | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | - | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

GUPTA TWO MIKE ARRIVAL (GUPTA 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | GUPTA | - | - | - | - | - | - | - | RNAV1 |
| TF | SA623 | - | 292° | - | 36.1 | - | - | - | RNAV1 |
| TF | SA622 | - | 314° | - | 18.5 | R | - | - | RNAV1 |
| TF | SA621 | - | 314° | - | 10.3 | - | - | - | RNAV1 |
| TF | SA620 | - | 345° | - | 29.1 | R | + 7000 | - 230 | RNAV1 |
| TF | SA606 | - | 330° | - | 10.0 | L | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | - | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

CHANGES: REMOVAL WPT SA612

**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

TRANSITION ALTITUDE
11000 FT

PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M

SALAX TWO MIKE ARRIVAL (SALAX 2M)

| PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE (M) | MAGNETIC VARIATION | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | NAVIGATION SPECIFICATION |
|-----------------|---------------------|----------|------------|--------------------|---------------|----------------|---------------|------------------|--------------------------|
| IF | SALAX | - | - | - | - | - | - | - | RNAV1 |
| TF | SA621 | - | 019° | - | 32.7 | - | - | - | RNAV1 |
| TF | SA620 | - | 345° | - | 29.1 | L | + 7000 | - 230 | RNAV1 |
| TF | SA606 | - | 330° | - | 10.0 | L | - | - | RNAV1 |
| TF | SA607 | - | 330° | - | 4.5 | - | - | - | RNAV1 |
| TF | SA608 | - | 330° | - | 5.0 | - | - | - 210 | RNAV1 |
| TF | SA609 | - | 330° | - | 5.0 | - | - | - | RNAV1 |
| TF | SA610 | - | 240° | - | 5.0 | L | - | - | RNAV1 |
| TF | SA611 | - | 150° | - | 5.0 | L | + 4000 | - | RNAV1 |

CHANGES: REMOVAL WPT SA612

**STANDARD ARRIVAL CHART
INSTRUMENT (STAR) - ICAO**

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNAV RWY 15**

TRANSITION ALTITUDE
11000 FT

PUGER 2M NIREN 2M KAKAK 2M
PULIP 2M SAROX 2M GUPTA 2M
SALAX 2M

WAYPOINT LIST

| WAYPOINT IDENTIFIER | COORDINATES |
|---------------------|-----------------------------------|
| BORDU | 03° 20' 43.35"N 100° 53' 39.12"E |
| GUPTA | 02° 09' 47.88"N 102° 38' 30.12"E |
| KAKAK | 03° 46' 09.69"N 101° 13' 46.90" E |
| NIREN | 03° 30' 03.71"N 100° 32' 54.94"E |
| PUGER | 03° 23' 59.00"N 100° 17' 31.00"E |
| PULIP | 03° 40' 23.88"N 101° 53' 48.12"E |
| SALAX | 02° 12' 24.12"N 101° 33' 47.88"E |
| SAROX | 02° 48' 02.16"N 102° 40' 18.84"E |
| SA601 | 03° 39' 46.40"N 101° 25' 49.88"E |
| SA602 | 03° 35' 26.74"N 101° 28' 22.02"E |
| SA603 | 03° 31' 07.08"N 101° 30' 54.14"E |
| SA604 | 03° 26' 47.44"N 101° 33' 26.25"E |
| SA605 | 03° 22' 53.04"N 101° 35' 43.55"E |
| SA606 | 03° 20' 20.18"N 101° 31' 25.21"E |
| SA607 | 03° 24' 14.57"N 101° 29' 07.88"E |
| SA608 | 03° 28' 34.22"N 101° 26' 35.74"E |
| SA609 | 03° 32' 53.87"N 101° 24' 03.59"E |
| SA610 | 03° 30' 20.97"N 101° 19' 45.18"E |
| SA611 | 03° 26' 01.32"N 101° 22' 17.35"E |
| SA620 | 03° 11' 40.94"N 101° 36' 29.42"E |
| SA621 | 02° 43' 27.84"N 101° 44' 17.21"E |
| SA622 | 02° 36' 18.25"N 101° 51' 42.95"E |
| SA623 | 02° 23' 25.81"N 102° 05' 04.35"E |
| SA624 | 02° 33' 20.44"N 102° 11' 27.59"E |

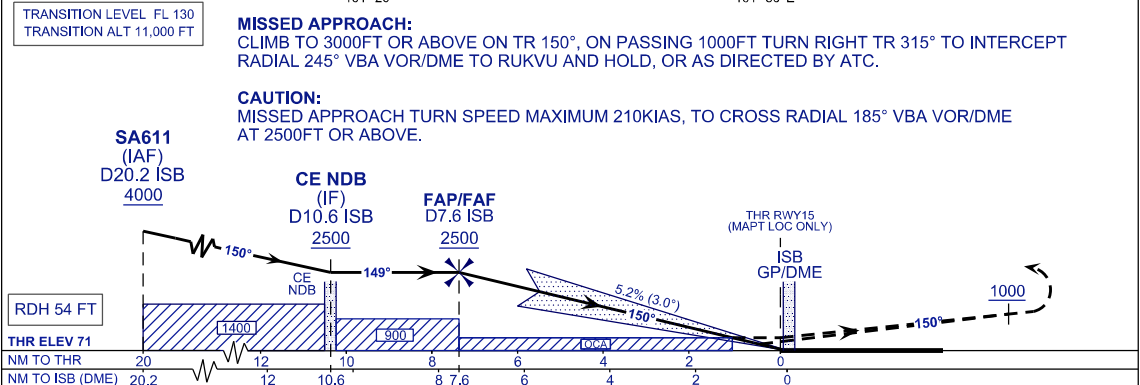
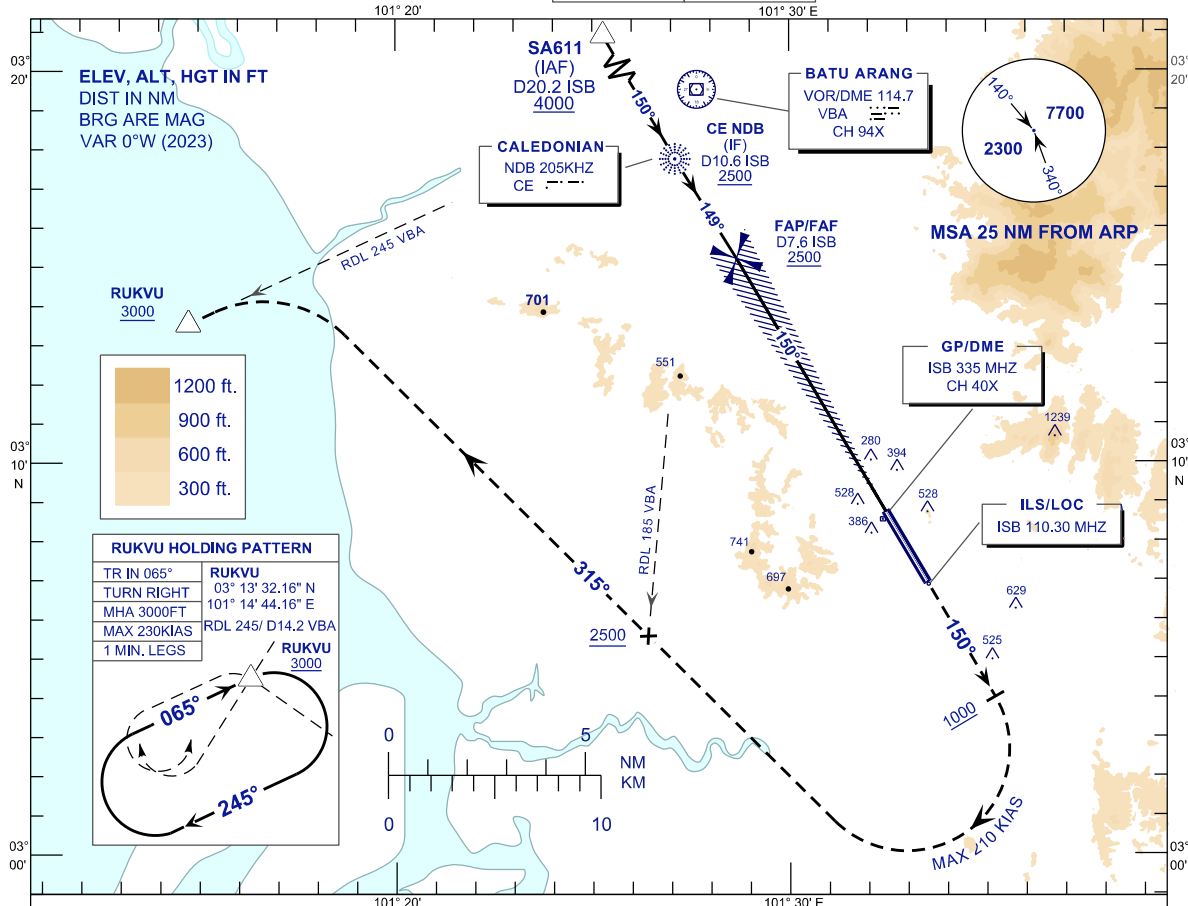
CHANGES: REMOVAL WPT SA612

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
ILS OR LOC RWY 15**



| | | | | | | | | |
|---------------------------------|------|------|------|------|------|------|-----|-----|
| DME ISB (NM) | 7.6 | 7.2 | 6.2 | 5.2 | 4.2 | 3.2 | 2.2 | 1.2 |
| DIST THR RWY15 (NM) | 7.5 | 7.0 | 6.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |
| ALTITUDE (FT) | 2500 | 2352 | 2033 | 1715 | 1396 | 1078 | 759 | 441 |
| GROUND SPEED (KT) | 80 | 100 | 120 | 140 | 160 | 180 | | |
| FAF - RWY15 (7.5NM) (MIN:SEC) | 5:36 | 4:29 | 3:44 | 3:12 | 2:48 | 2:29 | | |
| RATE OF DESCEND (5.2%) (FT/MIN) | 420 | 530 | 640 | 740 | 850 | 960 | | |

| | | | | |
|-------------------|-----------|---|---|---|
| OCA (H) | A | B | C | D |
| ILS/DME CAT I | 350 (279) | | | |
| LOC/DME (GP INOP) | 780 (709) | | | |

CHANGES : IN PROFILE VIEW, REVISE OCA(H) VALUE,
ADD WPT SA611 (IAF) IN APPROACH SEGMENT,
COORDINATE UPDATE - CE NDB, ISB ILS/LOC, ISB GP/DME & VBA.

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
ILS OR LOC RWY 15**

TABULAR DESCRIPTION

| WAYPOINT / NAVAID/ FIX | NAVAID FREQUENCY / CROSS REFERENCE FROM NAVAID | COORDINATES | |
|---------------------------|---|------------------|-------------------|
| SA611 (IAF) | 20.2 DME ISB | 03° 26' 01.32" N | 101° 22' 17.35" E |
| CE NDB (IF) | 205 KHZ / 10.6 DME ISB | 03° 17' 44.70" N | 101° 27' 07.25" E |
| FAP/FAF | 7.6 DME ISB | 03° 15' 11.24" N | 101° 28' 39.57" E |
| MAPT | THR RWY15 | 03° 08' 43.29" N | 101° 32' 26.75" E |
| ISB GP/DME | 335 MHZ / CH 40X | 03° 08' 32.32" N | 101° 32' 28.62" E |
| ISB ILS/LOC | 110.3 MHZ | 03° 06' 52.86" N | 101° 33' 31.40" E |
| RUKVU | RDL 245 VBA / 14.2 DME VBA | 03° 13' 32.16" N | 101° 14' 44.16" E |
| VBA VOR/DME | 114.7 MHZ / CH94X | 03° 19' 29.37" N | 101° 27' 38.11" E |

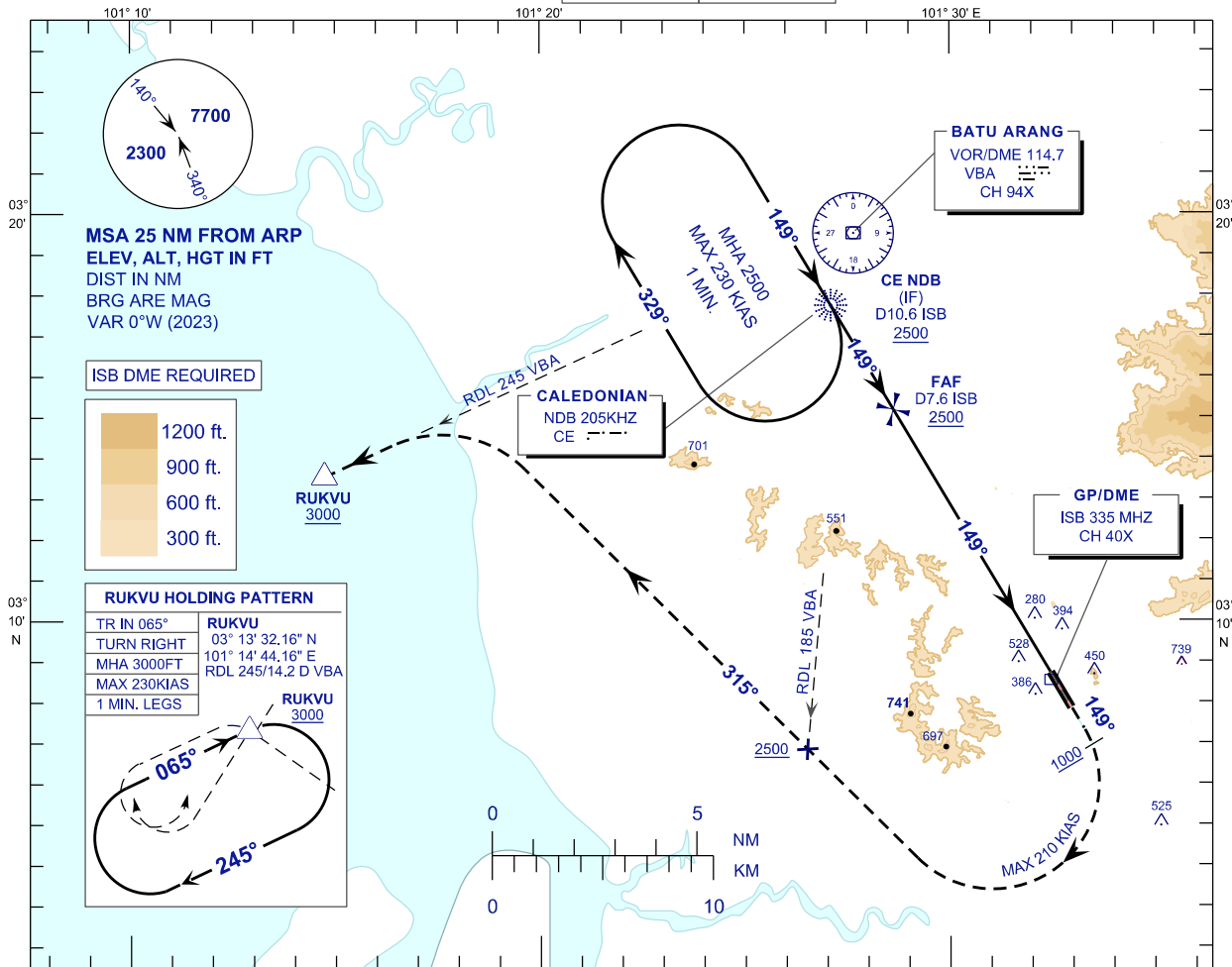
CHANGES : IN PROFILE VIEW, REVISE OCA(H) VALUE.
ADD WPT SA611 (IAF) IN APPROACH SEGMENT.
COORDINATE UPDATE - CE NDB, ISB ILS/LOC, ISB GP/DME & VBA.

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

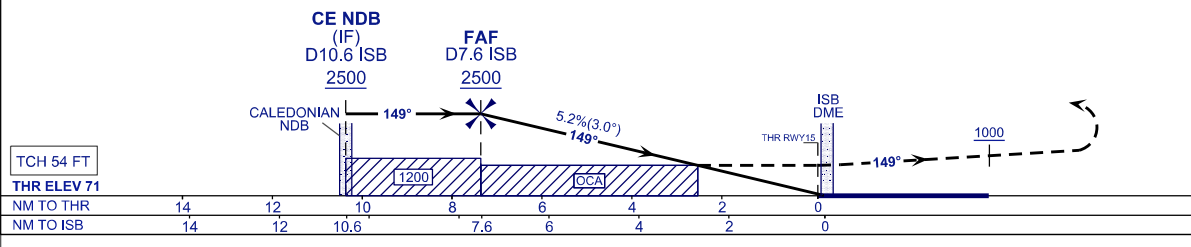
**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
NDB RWY 15**



TRANSITION LEVEL FL 130
TRANSITION ALT 11,000 FT

MISSED APPROACH:
CLIMB TO 3000FT OR ABOVE ON TR 149°, ON PASSING 1000FT TURN RIGHT TR 315° TO INTERCEPT RADIAL 245° VBA VOR/DME TO RUKVU AND HOLD, OR AS DIRECTED BY ATC.

CAUTION:
MISSED APPROACH TURN SPEED MAXIMUM 210KIAS, TO CROSS RADIAL 185° VBA VOR/DME AT 2500FT OR ABOVE.



| | | | | | | | | |
|---------------------|------|------|------|------|------|------|-----|-----|
| DME ISB (NM) | 7.6 | 7.2 | 6.2 | 5.2 | 4.2 | 3.2 | 2.2 | 1.2 |
| DIST THR RWY15 (NM) | 7.5 | 7.0 | 6.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |
| ALTITUDE (FT) | 2500 | 2350 | 2031 | 1713 | 1394 | 1076 | 758 | 439 |

| | | | | |
|----------------------|-----------|---|---|---|
| OCA (H) | A | B | C | D |
| STRAIGHT IN APPROACH | 910 (839) | | | |

| | | | | | | |
|---------------------------------|------|------|------|------|------|------|
| GROUND SPEED (KT) | 80 | 100 | 120 | 140 | 160 | 180 |
| FAF - RWY15 (7.5NM) (MIN:SEC) | 5:36 | 4:29 | 3:44 | 3:12 | 2:48 | 2:29 |
| RATE OF DESCEND (5.2%) (FT/MIN) | 420 | 530 | 640 | 740 | 850 | 960 |

CHANGES : OCA/OCH VALUE & OBSTACLES UPDATE
COORDINATE UPDATE - VBA VOR/DME, CE NDB & ISB GP/DME

INSTRUMENT
APPROACH
CHART - ICAO

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
NDB RWY 15

TABULAR DESCRIPTION

| WAYPOINT / NAVAID/ FIX | NAVAID FREQUENCY / CROSS REFERENCE FROM NAVAID | COORDINATES | |
|---------------------------|---|------------------|-------------------|
| CE NDB (IF) | 205 KHZ / 10.6 DME ISB | 03° 17' 44.70" N | 101° 27' 07.25" E |
| FAF | 7.6 DME ISB | 03° 15' 10.24" N | 101° 28' 37.19" E |
| MAPT | THR RWY15 | 03° 08' 43.29" N | 101° 32' 26.75" E |
| ISB GP/DME | 335 MHZ / CH 40X | 03° 08' 32.32" N | 101° 32' 28.62" E |
| RUKVU | RDL 245 VBA / 14.2 DME VBA | 03° 13' 32.16" N | 101° 14' 44.16" E |
| VBA VOR/DME | 114.7 MHZ / CH94X | 03° 19' 29.37" N | 101° 27' 38.11" E |

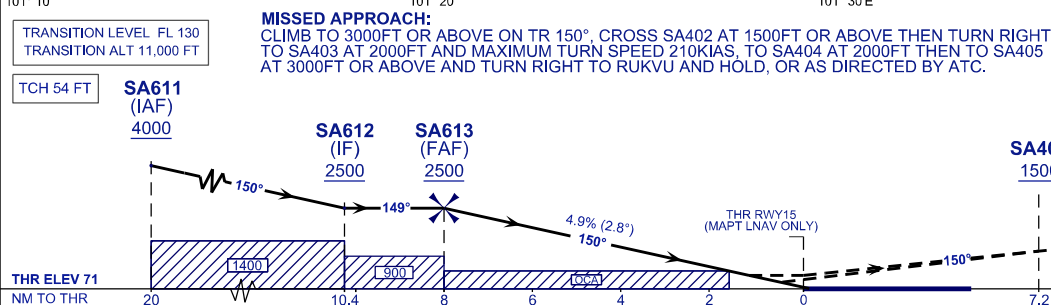
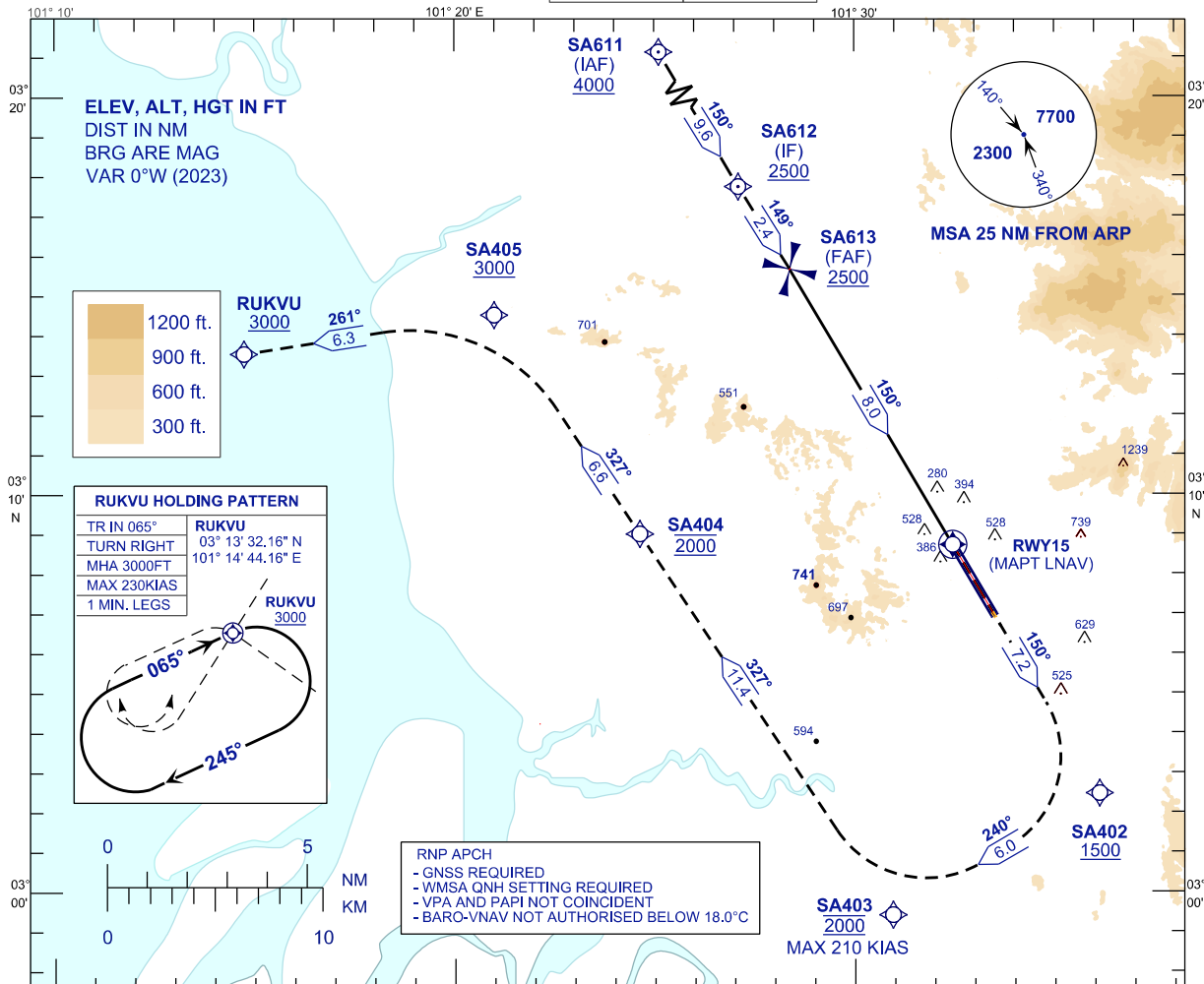
CHANGES : OCA/OCH VALUE & OBSTACLES UPDATE
COORDINATE UPDATE - VBA VOR/DME, CE NDB & ISB GP/DME

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNP Y RWY 15**



| OCA (H) | | ALTIMETER /HEIGHT ON FINAL APPROACH | | | | | | | |
|---------------------------------|-----------|-------------------------------------|------|------|------|------|------|-----|-----|
| | | A | B | C | D | | | | |
| STRAIGHT IN APPROACH | LNAV | 780 (709) | | | | | | | |
| | LNAV/VNAV | 670 (599) | | | | | | | |
| DIST THR RWY15 (NM) | | 8.0 | 7.0 | 6.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |
| ALTITUDE (FT) | | 2500 | 2214 | 1917 | 1620 | 1323 | 1026 | 719 | 422 |
| GROUND SPEED (KT) | | 80 | 100 | 120 | 140 | 160 | 180 | | |
| SA613 - THR15(8.0NM) (MIN:SEC) | | 6:00 | 4:48 | 4:00 | 3:26 | 3:00 | 2:40 | | |
| RATE OF DESCEND (4.9%) (FT/MIN) | | 400 | 500 | 590 | 690 | 790 | 890 | | |

CHANGES : IN PROFILE VIEW, CHANGE LNAV AND LNAV/VNAV VALUE,
ADD SA611 WPT (IAF) IN APPROACH SEGMENT,
COORDINATE UPDATE - WPT SA612.

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 15 - ELEV 71FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNP Y RWY 15**

TABULAR DESCRIPTION

| SEQ. | PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE/ TRACK (M) | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | VPA/ TCH(FT) | NAVIGATION SPECIFICATION |
|------|-----------------|---------------------|----------|-------------------|---------------|----------------|---------------|------------------|--------------|--------------------------|
| 010 | IF | SA611 (IAF) | - | - | - | - | +4000 | - | - | RNP APCH |
| 020 | TF | SA612 (IF) | - | 150° | 9.6 | - | +2500 | - | - | RNP APCH |
| 030 | TF | SA613 (FAF) | - | 149° | 2.4 | - | +2500 | - | - | RNP APCH |
| 040 | TF | RWY15 (MAPT LNAV) | Y | 150° | 8.0 | - | - | - | -2.8°/54 | RNP APCH |
| 050 | TF | SA402 | - | 150° | 7.2 | - | +1500 | - | - | RNP APCH |
| 060 | TF | SA403 | - | 240° | 6.0 | R | @2000 | -210 | - | RNP APCH |
| 070 | TF | SA404 | - | 327° | 11.4 | R | @2000 | - | - | RNP APCH |
| 080 | TF | SA405 | - | 327° | 6.6 | - | +3000 | - | - | RNP APCH |
| 090 | TF | RUKVU | - | 261° | 6.3 | L | +3000 | - | - | RNP APCH |
| 100 | HM | RUKVU | Y | 065° | - | R | +3000 | -230 | - | RNAV 1 |

WAYPOINT LIST

| WAYPOINT IDENTIFIER | COORDINATES |
|---------------------|------------------------------------|
| RUKVU | 03° 13' 32.16" N 101° 14' 44.16" E |
| SA402 | 03° 02' 28.21" N 101° 36' 06.45" E |
| SA403 | 02° 59' 24.71" N 101° 30' 56.58" E |
| SA404 | 03° 09' 00.05" N 101° 24' 37.46" E |
| SA405 | 03° 14' 30.81" N 101° 20' 59.49" E |
| SA611 | 03° 26' 01.32" N 101° 22' 17.35" E |
| SA612 | 03° 17' 44.70" N 101° 27' 07.25" E |
| SA613 | 03° 15' 39.32" N 101° 28' 23.12" E |
| THR RWY15 | 03° 08' 43.29" N 101° 32' 26.75" E |

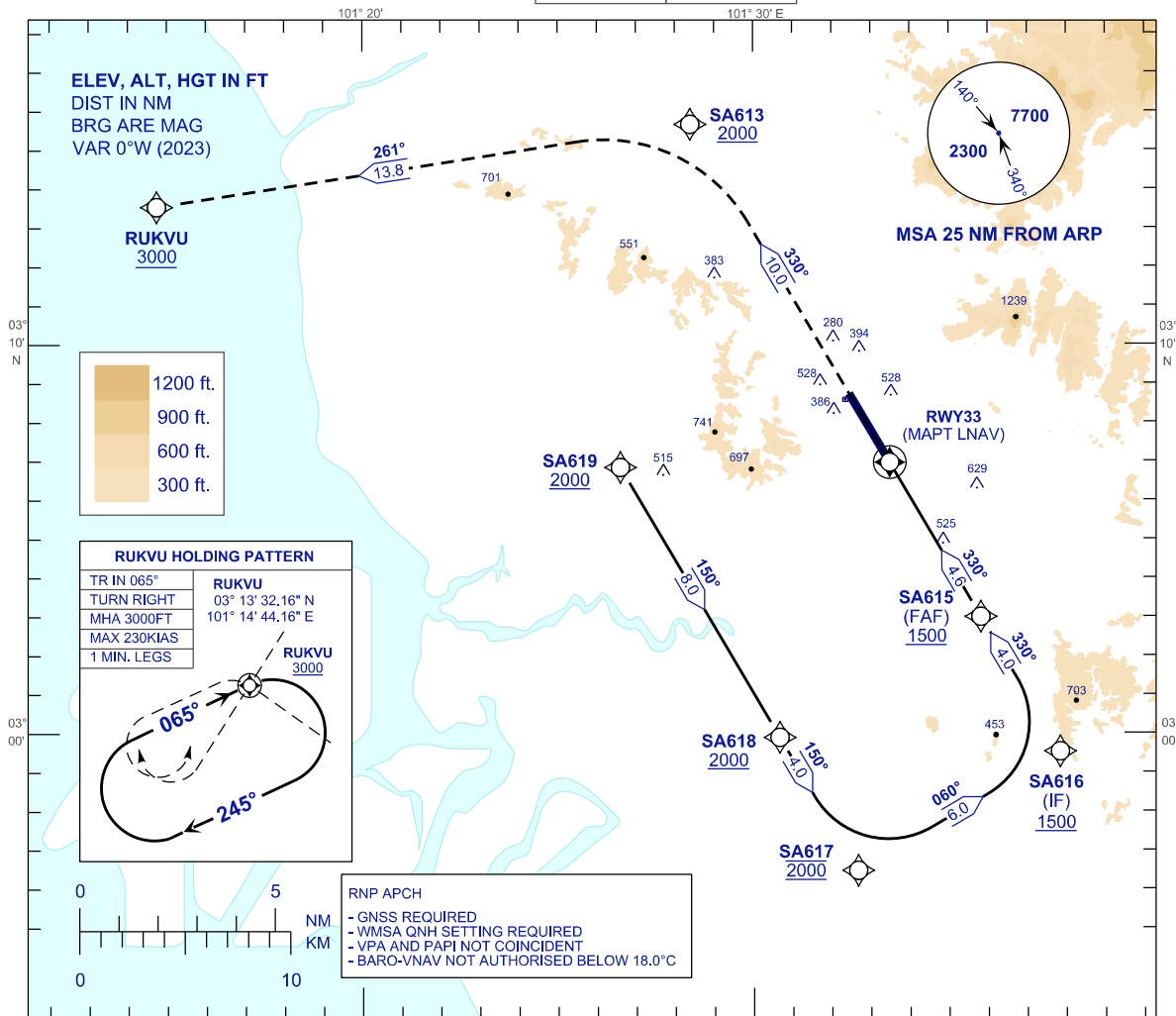
CHANGES : IN PROFILE VIEW, CHANGE LNAV AND LNAV/VNAV VALUE,
ADD SA611 WPT (IAF) IN APPROACH SEGMENT,
COORDINATE UPDATE - WPT SA612.

INSTRUMENT APPROACH CHART - ICAO

AERODROME ELEV 89FT
HEIGHT RELATED TO THR RWY 33 - ELEV 89FT

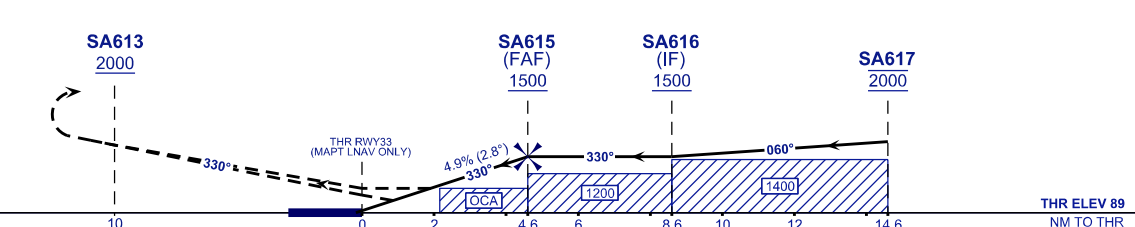
| | | | |
|-----|--------|------|--------|
| APP | 118.65 | ACD | 120.45 |
| | 124.20 | SMC | 121.90 |
| | 135.25 | TWR | 118.20 |
| FIS | 126.10 | ATIS | 127.60 |

SUBANG/SULTAN ABDUL AZIZ SHAH (WMSA) RNP Y RWY 33



TRANSITION LEVEL FL 130
TRANSITION ALT 11,000 FT
TCH 56 FT

MISSED APPROACH:
CLIMB TO 3000FT OR ABOVE ON TR 330°, CROSS SA613 AT 2000FT OR ABOVE, THEN TURN LEFT TO RUKVU AND HOLD, OR AS DIRECTED BY ATC.



| OCA (OCH) | | A | B | C | D |
|----------------------|-----------|-----------|---|---|---|
| STRAIGHT IN APPROACH | LNAV | 780 (691) | | | |
| | LNAV/VNAV | 522 (433) | | | |

| ALTITUDE /HEIGHT ON FINAL APPROACH | | | | | |
|------------------------------------|------|------|------|-----|-----|
| DIST THR RWY33 (NM) | 4.6 | 4.0 | 3.0 | 2.0 | 1.0 |
| ALTITUDE (FT) | 1500 | 1328 | 1031 | 733 | 436 |

| | | | | | | |
|---------------------------------|------|------|------|------|------|------|
| GROUND SPEED (KT) | 80 | 100 | 120 | 140 | 160 | 180 |
| FAR33 - THR33(4.6NM) (MIN:SEC) | 3:26 | 2:45 | 2:17 | 1:58 | 1:43 | 1:32 |
| RATE OF DESCEND (4.9%) (FT/MIN) | 400 | 500 | 590 | 690 | 790 | 890 |

CHANGES : IN PROFILE VIEW, OCA/OCH VALUE, ESTABLISH WPT SA616, SA617, SA618 & SA619 IN ARRIVAL SEGMENT, REMOVAL WPT SA614.

**INSTRUMENT
APPROACH
CHART - ICAO**

AERODROME ELEV 89FT
HEIGHT RELATED TO
THR RWY 33 - ELEV 89FT

**SUBANG/SULTAN ABDUL
AZIZ SHAH (WMSA)
RNP Y RWY 33**

TABULAR DESCRIPTION

| SEQ. | PATH TERMINATOR | WAYPOINT IDENTIFIER | FLY OVER | COURSE/ TRACK (M) | DISTANCE (NM) | TURN DIRECTION | ALTITUDE (FT) | SPEED LIMIT (KT) | VPA/ RDH (FT) | NAVIGATION SPECIFICATION |
|------|-----------------|---------------------|----------|-------------------|---------------|----------------|---------------|------------------|---------------|--------------------------|
| 010 | IF | SA619 | - | - | - | - | +2000 | - | - | RNP APCH |
| 020 | TF | SA618 | - | 150° | 8.0 | - | +2000 | - | - | RNP APCH |
| 030 | TF | SA617 | - | 150° | 4.0 | - | @2000 | - | - | RNP APCH |
| 040 | TF | SA616 (IF) | - | 060° | 6.0 | L | +1500 | - | - | RNP APCH |
| 050 | TF | SA615 (FAF) | - | 330° | 4.0 | L | +1500 | - | - | RNP APCH |
| 060 | TF | RWY33 (MAPT LNAV) | Y | 330° | 4.6 | - | - | - | -2.8°/56 | RNP APCH |
| 070 | TF | SA613 | - | 330° | 10.0 | - | +2000 | - | - | RNP APCH |
| 080 | TF | RUKVU | - | 261° | 13.8 | L | +3000 | - | - | RNP APCH |
| 090 | HM | RUKVU | Y | 065° | - | R | +3000 | -230 | - | RNAV 1 |

WAYPOINT LIST

| WAYPOINT IDENTIFIER | COORDINATES |
|---------------------|------------------------------------|
| RUKVU | 03° 13' 32.16" N 101° 14' 44.16" E |
| SA613 | 03° 15' 39.32" N 101° 28' 23.12" E |
| SA615 | 03° 02' 59.24" N 101° 35' 48.28" E |
| SA616 | 02° 59' 31.41" N 101° 37' 49.99" E |
| SA617 | 02° 56' 27.84" N 101° 32' 39.89" E |
| SA618 | 02° 59' 54.23" N 101° 30' 39.03" E |
| SA619 | 03° 06' 49.87" N 101° 26' 35.65" E |
| THR RWY33 | 03° 06' 57.19" N 101° 33' 28.91" E |

CHANGES : IN PROFILE VIEW, OCA/OCH VALUE,
ESTABLISH WPT SA616, SA617, SA618 & SA619 IN ARRIVAL SEGMENT,
REMOVAL WPT SA614.