

26-JAN-2017

UPG-WAAA**1-10****AOI****AOI****GENERAL****Operational Hours****ATS Hours:** H24 (except FSS 2100-1200)

AD ADMIN Hours: AD MON-THU 0000-0830
 FRI 0000-0800
 ATS MON-FRI 0000-0900

Airport Information**RFF:** CAT 8

PCN: RWY 03/21: 77/F/C/W/T
 RWY 13/31: 63/F/C/X/T

Customs: 2300-1500, other times O/R**Operation****Standard Taxi Routes:** See separate header below.**Warnings**

Birds in vicinity of AD.

DEPARTURE**Take-off Minima**

RWY		03/21, 13/31	
All ACFT	ft - m/km	0 - 400V	HJ only
		0 - 800V	HN

ATC Slot, Clearance**Start-up/Push-back**

REQ CLR from GND before push-back or ENG start.

Standard Taxi Routes Arrival**RWY 03**

Apron	Path	Taxi Routes
Cargo	D1	D - WP - I Exit E - turn left WP - turn right I
	E1	E - WP - I Exit E - turn left WP - turn right I
	F1	F - WP - I Exit F - turn left WP - turn right I
	SP1	SP - WP - I Exit SP - turn left WP - turn right I
New	D2	D - WP - F Exit E - turn left WP - turn right F
	D3	D - WP - E Exit E - turn left WP - turn right E
	E2	E - WP - F Exit E - turn left WP - turn right F
	E3	E Exit E
	F2	F Exit F
	F3	F - WP - E Exit F - turn right WP - turn left E
	SP2	SP - WP - F Exit SP - turn left WP - turn right F
	SP3	SP - WP - E Exit SP - turn left WP - turn right E
Old/Hangar/ Shelter	D4	D - WP - SP - C Exit D - turn right WP - turn left SP - turn left C
	D5	D - WP - SP - B - RWY 13 - A Exit D - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	E4	E - WP - SP - C Exit E - turn right WP - turn left SP - turn left C
	E5	E - WP - SP - B - RWY 13 - A Exit E - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	F4	F - WP - SP - C Exit F - turn right WP - turn left SP - turn left C

Standard Taxi Routes Arrival**RWY 03**

Apron	Path	Taxi Routes
Old/Hangar/ Shelter	F5	F - WP - SP - B - RWY 13 - A Exit F - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	SP4	SP - C Exit SP - turn left C
	SP5	SP - B - RWY 31 - A Exit SP - turn right B - turn left A

RWY 21

Apron	Path	Taxi Routes
Cargo	E1	E - WP - I Exit E - turn left WP - turn right I
	F1	F - WP - I Exit F - turn left WP - turn right I
	G1	G - I Exit G - continue I
	H1	H - WP - I Exit H - turn right WP - turn left I
New	E2	E - WP - F Exit E - turn left WP - turn right F
	E3	E Exit E
	F2	F Exit F
	F3	F - WP - E Exit F - turn right WP - turn left E
	G2	G - WP - F Exit G - turn right WP - turn left F
	G3	G - WP - E Exit G - turn right WP - turn left E
	H2	H - WP - F Exit H - turn right WP - turn left F
	H3	H - WP - E Exit H - turn right WP - turn left E
Old/Hangar/ Shelter	E4	E - WP - SP - C Exit E - turn right WP - turn left SP - turn left C

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UPG-WAAA**1-40****AOI****Standard Taxi Routes Arrival****RWY 21**

Apron	Path	Taxi Routes
Old/Hangar/ Shelter	E5	E - WP - SP - B - RWY 13 - A Exit E - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	F4	F - WP - SP - C Exit F - turn right WP - turn left SP - turn left C
	F5	F - WP - SP - B - RWY 13 - A Exit F - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	G4	G - WP - SP - C Exit G - turn right WP - turn left SP - turn left C
	G5	G - WP - SP - B - RWY 13 - A Exit G - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A
	H4	H - WP - SP - C Exit H - turn right WP - turn left SP - turn left C
	H5	H - WP - SP - B - RWY 13 - A Exit H - turn right WP - turn left SP - turn right B - turn left enter back track RWY 13 - turn left A

RWY 13

Apron	Path	Taxi Routes
Cargo	J1	J - RWY 03 - G - I Exit J - continue enter back track RWY 03 - turn right G - continue I
	WP1	WP - I Exit WP - turn right I
New	J2	J - RWY 03 - F Exit J - continue enter back track RWY 03 - turn right F
	J3	J - RWY 03 - E Exit J - continue enter back track RWY 03 - turn right F
	WP2	WP - F Exit WP - turn right F
	WP3	WP - E Exit WP - turn right E
	J4	J - SP - C Exit J - turn right SP - turn left C
Old/Hangar/ Shelter	J5	J - SP - C - B - RWY 13 - A Exit J - turn right SP - turn right B - turn left enter back track RWY 13 - turn left A

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UPG-WAAA**1-50****AOI****AOI****Standard Taxi Routes Arrival****RWY 13**

Apron	Path	Taxi Routes
Old/Hangar/ Shelter	WP4	WP - SP - C
		Exit WP - turn right SP - turn left C
	WP5	WP - SP - B - RWY 13 - A
		Exit WP - turn right SP - turn right B - turn left enter back track RWY 13 - turn left A

RWY 31

Apron	Path	Taxi Routes
Cargo	A1	A - Old Apron - C - SP - WP - I
		Exit A - enter Old Apron - turn left C - turn right SP - turn right WP - turn right I
	B1	B - SP - WP - I
		Exit B - turn left SP - turn right WP - turn right I
	C1	C - SP - WP - I
		Exit C - turn left SP - turn right WP - turn right I
	A2	A - Old Apron - C - SP - WP - F
		Exit A - enter Old Apron - turn left C - turn right SP - turn right WP - turn right F
	A3	A - Old Apron - C - SP - WP - E
		Exit A - enter Old Apron - turn left C - turn right SP - turn right WP - turn right E
	B2	B - SP - WP - F
		Exit B - turn left SP - turn right WP - turn right F
	B3	B - SP - WP - E
		Exit B - turn left SP - turn right WP - turn right E
	C2	C - SP - WP - F
		Exit C - turn left SP - turn right WP - turn right F
	C3	C - SP - WP - E
		Exit C - turn left SP - turn right WP - turn right E
Old/Hangar/ Shelter	A4	A
		Exit A
	C4	C
		Exit C

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UPG-WAAA**1-60****AOI****AOI****Standard Taxi Routes Departure****RWY 03**

Apron	Path	Taxi Routes
Cargo	I1	I - WP - H I - turn right WP - turn left H
	I2	I - G - RWY 03 I - continue G - turn right enter back track RWY 03
New	F1	F - WP - H F - turn right WP - turn left H
	F2	F - WP - G - RWY 03 F - turn right WP - turn left G - turn right enter back track RWY 03
	F3	F - RWY 03 F - turn right enter back track RWY 03
	E1	E - WP - H E - turn right WP - turn left H
	E2	E - WP - G - RWY 03 E - turn right WP - turn left G - turn right enter back track RWY 03
	E3	E - WP - F - RWY 03 E - turn right WP - turn left F - turn right enter back track RWY 03
	E4	E - RWY 03 E - turn right enter back track RWY 03
	C1	C - SP - WP - H C - turn right SP - turn right WP - turn left H
Old/Hangar/ Shelter	C2	C - SP - WP - G - RWY 03 C - turn right SP - turn right WP - turn left G - turn right enter back track RWY 03
	C3	C - SP - RWY 03 C - turn right SP - turn right enter back track RWY 03
	A1	A - RWY 31 - B - SP - WP - H A - turn right enter back track RWY 31 - turn right B - turn left SP - turn right WP - turn left H
	A2	A - RWY 31 - B - SP - WP - G - RWY 03 A - turn right enter back track RWY 31 - turn right B - turn left SP - turn right WP - turn left G - turn right enter back track RWY 03
	A3	A - RWY 31 - WP - H A - turn right enter back track RWY 31 - turn right WP - turn left H

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UPG-WAAA**1-70****AOI****Standard Taxi Routes Departure****RWY 21**

Apron	Path	Taxi Routes
Cargo	I3	I - G - RWY 21 I - continue G - turn left enter back track RWY 21
	I4	I - WP - F - RWY 21 I - turn left WP - turn right F - turn left enter back track RWY 21
	I5	I - WP - E - RWY 21 I - turn left WP - turn right E - turn left enter back track RWY 21
	I6	I - WP - SP I - turn left WP - turn right SP
	F4	F - RWY 21 F - turn left enter back track RWY 21
	F5	F - WP - SP F - turn left WP - turn right SP
New	E5	E - RWY 21 E - turn left enter back track RWY 21
	E6	E - WP - SP E - turn left WP - turn right SP
	C4	C - SP C - turn right SP
	C5	C - RWY 31 - J C - turn right enter back track RWY 31 - turn right J
Old/Hangar/ Shelter	A4	A - RWY 31 - B - SP A - turn right enter back track RWY 31 - turn right B - turn left SP
	A5	A - RWY 31 - J A - turn right enter back track RWY 31 - turn right J

RWY 13

Apron	Path	Taxi Routes
Cargo	I9	I - G - RWY 21 - J - RWY 13 I - continue G - turn left enter back track RWY 21 - continue J - turn left enter back track RWY 13
	I10	I - WP - RWY 13 I - turn left WP - turn left enter back track RWY 13
	I11	I - WP - SP - B - RWY 13 I - turn left WP - turn left SP - turn right B - turn left enter back track RWY 13
	F8	F - WP - RWY 13 F - turn left WP - turn left enter back track RWY 13
New		

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UPG-WAAA**1-80****AOI****Standard Taxi Routes Departure****RWY 13**

Apron	Path	Taxi Routes
New	F9	F - WP - SP - B - RWY 13 F - turn left WP - turn left SP - turn right B - turn left enter back track RWY 13
	E9	E - WP - RWY 13 E - turn left WP - turn left enter back track RWY 13
	E10	E - WP - SP - B - RWY 13 E - turn left WP - turn left SP - turn right B - turn left enter back track RWY 13
	C9	C - RWY 13 C - turn left enter back track RWY 13
Old/Hangar/ Shelter	C10	C - B - RWY 13 C - turn left B - turn left enter back track RWY 13
	A7	A - RWY 13 A - turn right enter back track RWY 13
	A8	A - RWY 13 A - turn left enter back track RWY 13

RWY 31

Apron	Path	Taxi Routes
Cargo	I7	I - G - RWY 21 - J - RWY 31 I - continue G - turn left back track RWY 21 - continue J - turn right enter back track RWY 31
	I8	I - WP - RWY 31 I - turn left WP - turn right enter back track RWY 31
New	F6	F - RWY 21 - J - RWY 31 F - turn left enter back track RWY 21 - continue J - turn right enter back track RWY 31
	F7	F - WP - RWY 31 F - turn left WP - turn right enter back track RWY 31
	E7	E - RWY 21 - J - RWY 31 E - turn left enter back track RWY 21 - continue J - turn right enter back track RWY 31
	E8	E - WP - RWY 31 E - turn left WP - turn right enter back track RWY 31
	C6	C - SP - J - RWY 31 C - turn right SP - turn left J - turn right enter back track RWY 31
	C7	C - SP - WP - RWY 31 C - turn right SP - turn left WP - turn right enter back track RWY 31

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UPG-WAAA**1-90****AOI****AOI****Standard Taxi Routes Departure****RWY 31**

Apron	Path	Taxi Routes
Old/Hangar/ Shelter	C8	C - RWY 31 C - turn right enter back track RWY 31
	A6	A - RWY 31 - B - SP - J - RWY 31 A - turn right enter back track RWY 31 - turn right B - turn left SP -turn left J - turn right enter back track RWY 31

UPG-WAAA

2-10

AFC

AFC

AFC

20

37

9360

7000

3000

2000

1000

ATIS
RAD
Ujung Pandang CTL

126.250
127.500
134.100 Pangkalan Bun UTA
132.500 Balikpapan UTA
128.100 Ujung Pandang East UTA
120.700 Bali North UTA
128.300 Bali South UTA
123.900 Bali West UTA
127.500 (ACL Lower)
FL150-FL245

119.400
120.600
118.100
121.600

10 NM

GURMI

RUDAL

APPHA

GAMAL

10 NM

GURMI

RUDAL

APPHA

GAMAL

ILS Cat 1
D111.3 IUPG
D5.2 IUPG 1500

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D114.7 MKS
S05.04.9 E119.31.6

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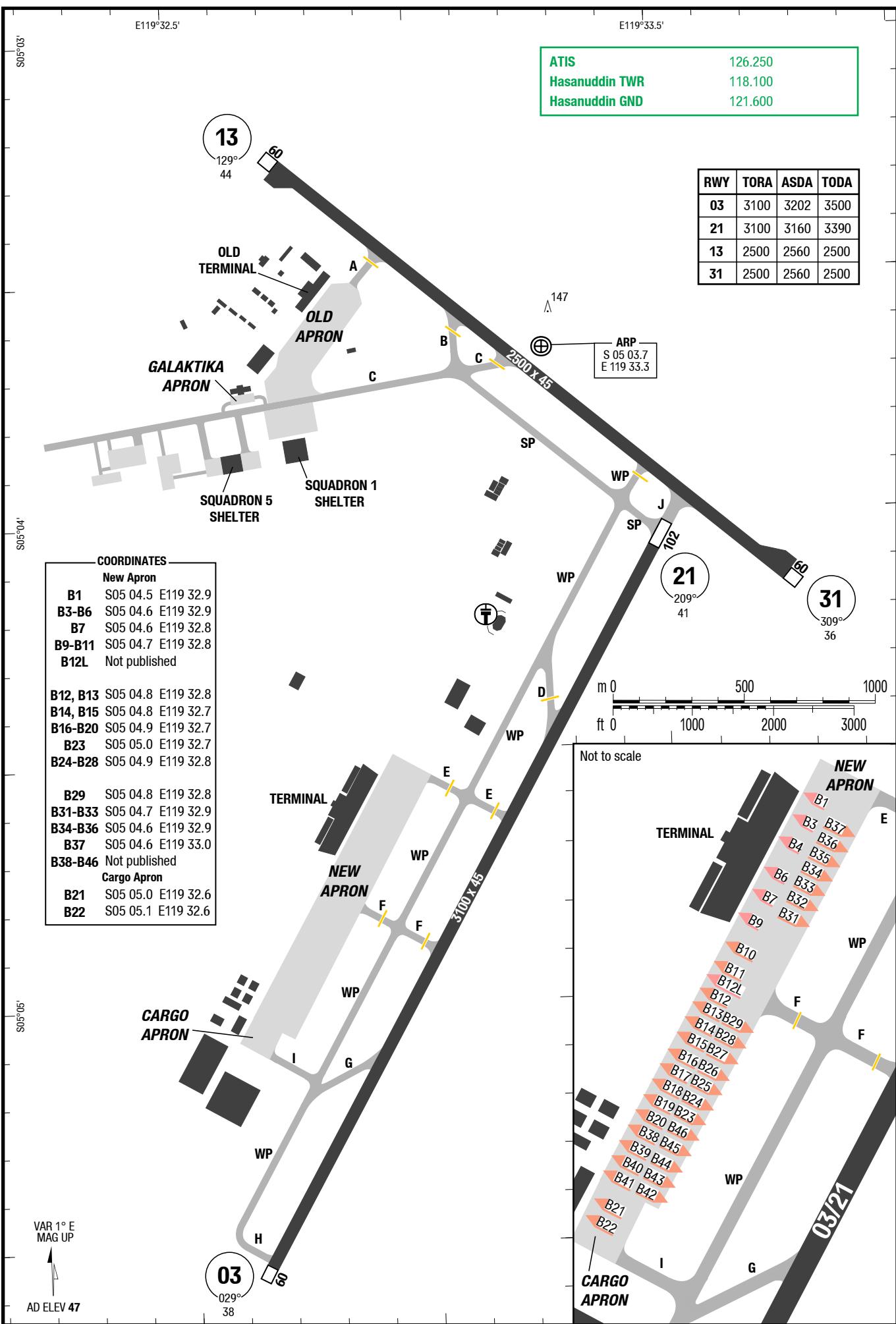
UPG-WAAA

3-20

AGC

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UPG-WAAA

Indonesia Makassar Sultan Hasanuddin Intl

Hasanuddin 3/4

4-10

Hasanuddin 1/2

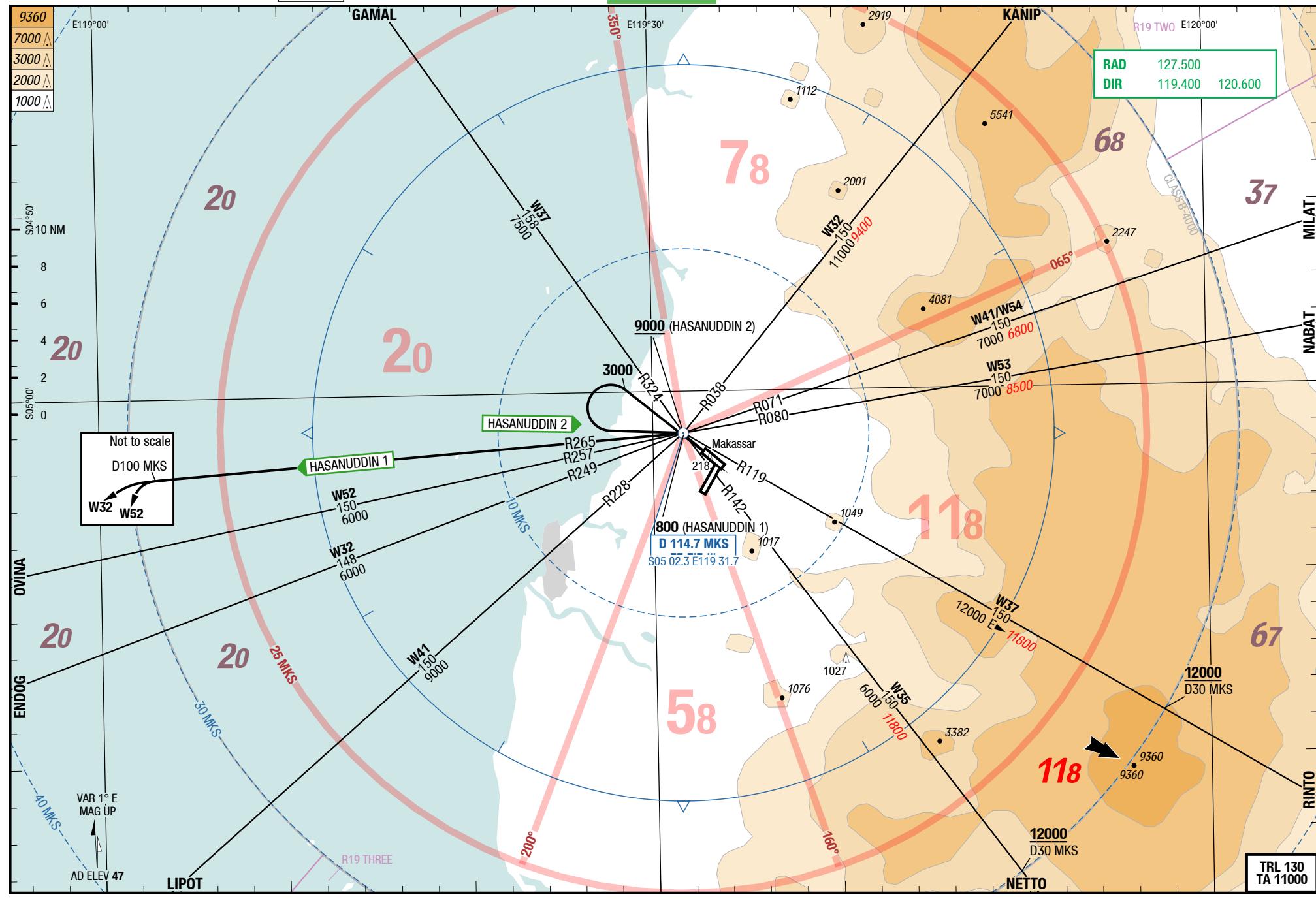
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Sultan Hasanuddin Intl Makassar Indonesia

Hasanuddin 3/4

Hasanuddin 1/2



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UPG-WAAA

Indonesia Makassar Sultan Hasanuddin Intl

4-20

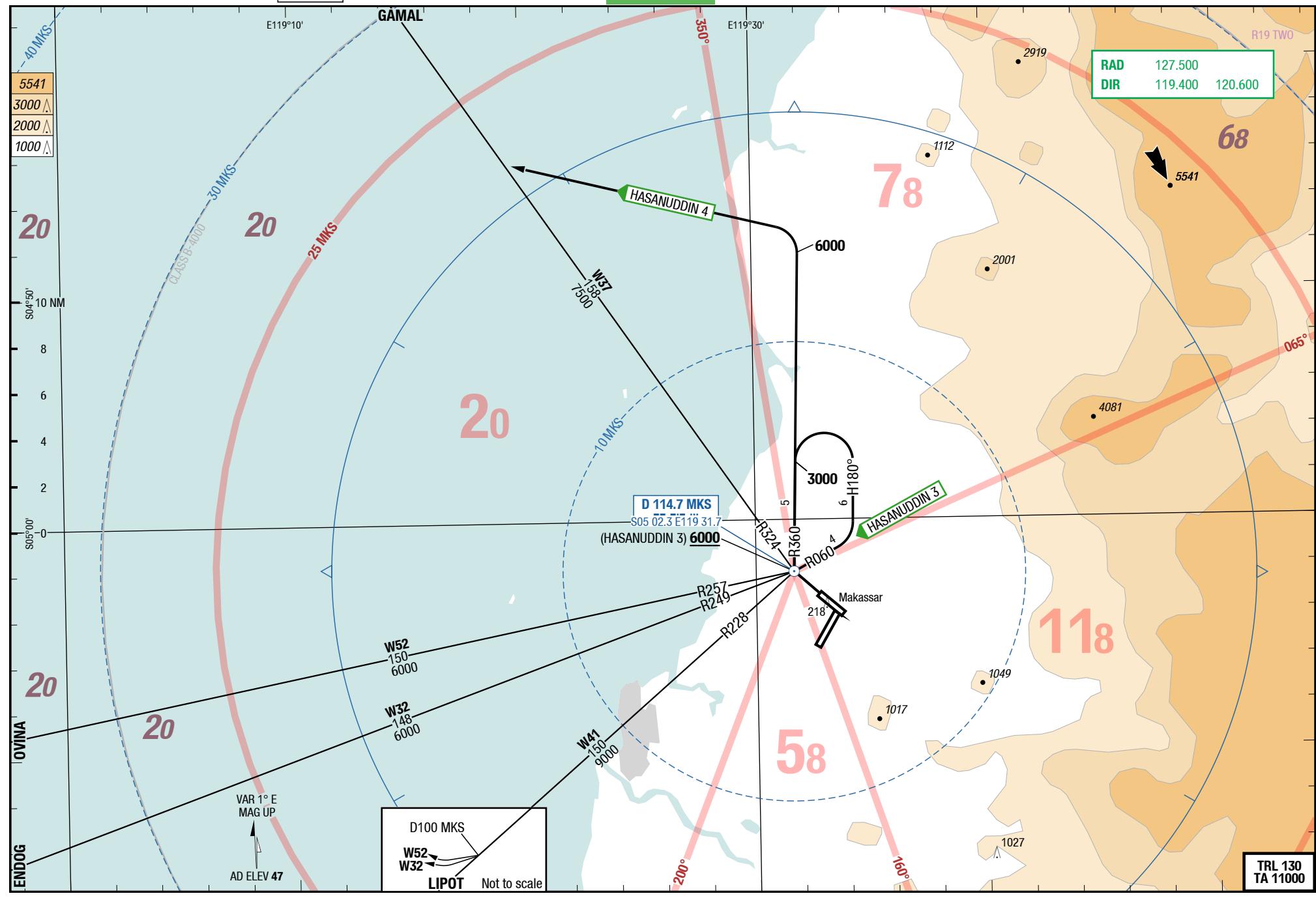
Hasanuddin 3/4

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Sultan Hasanuddin Intl Makassar Indonesia

Hasanuddin 3/4

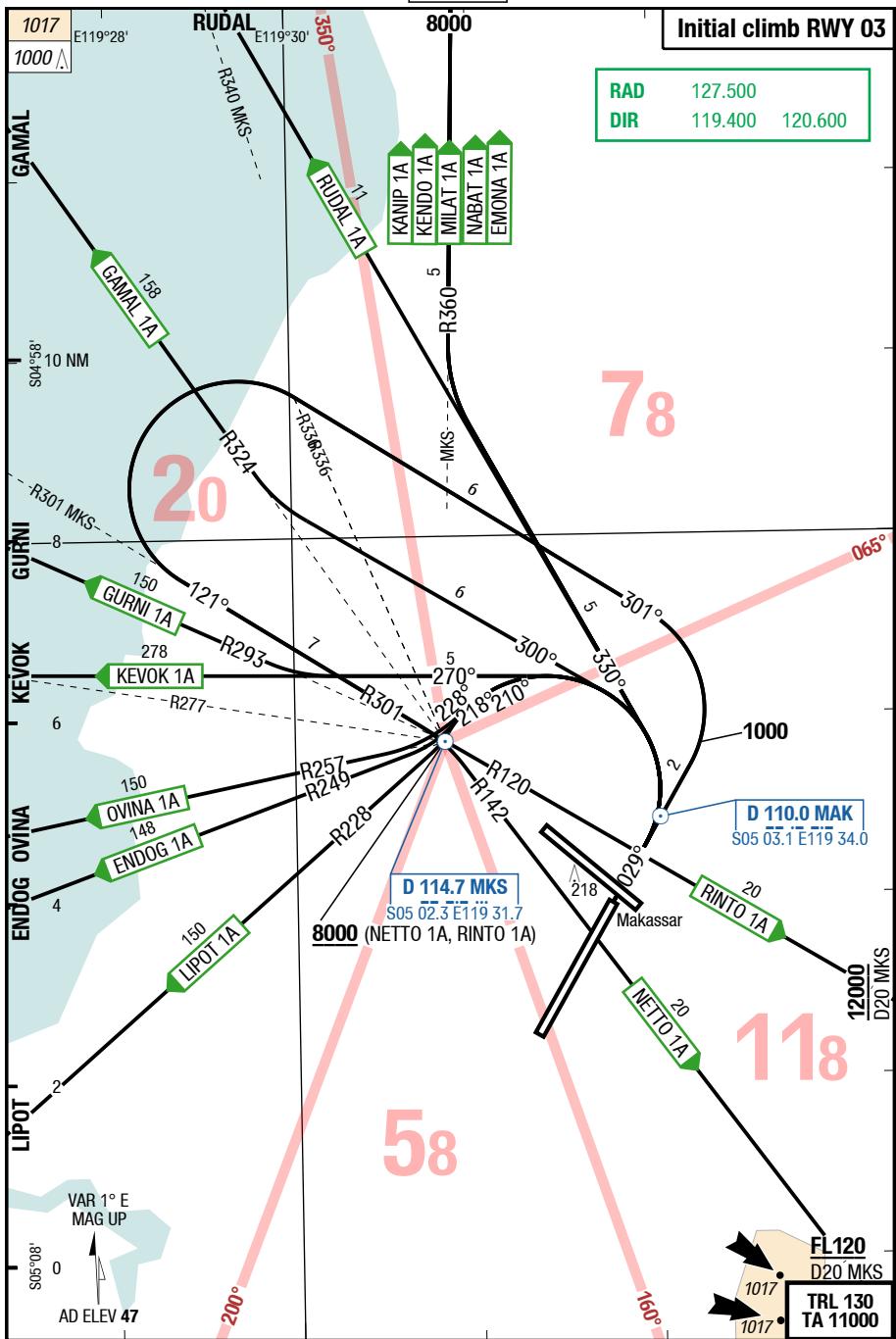


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UPG-WAAA

4-30

Initial Climb RWY 03



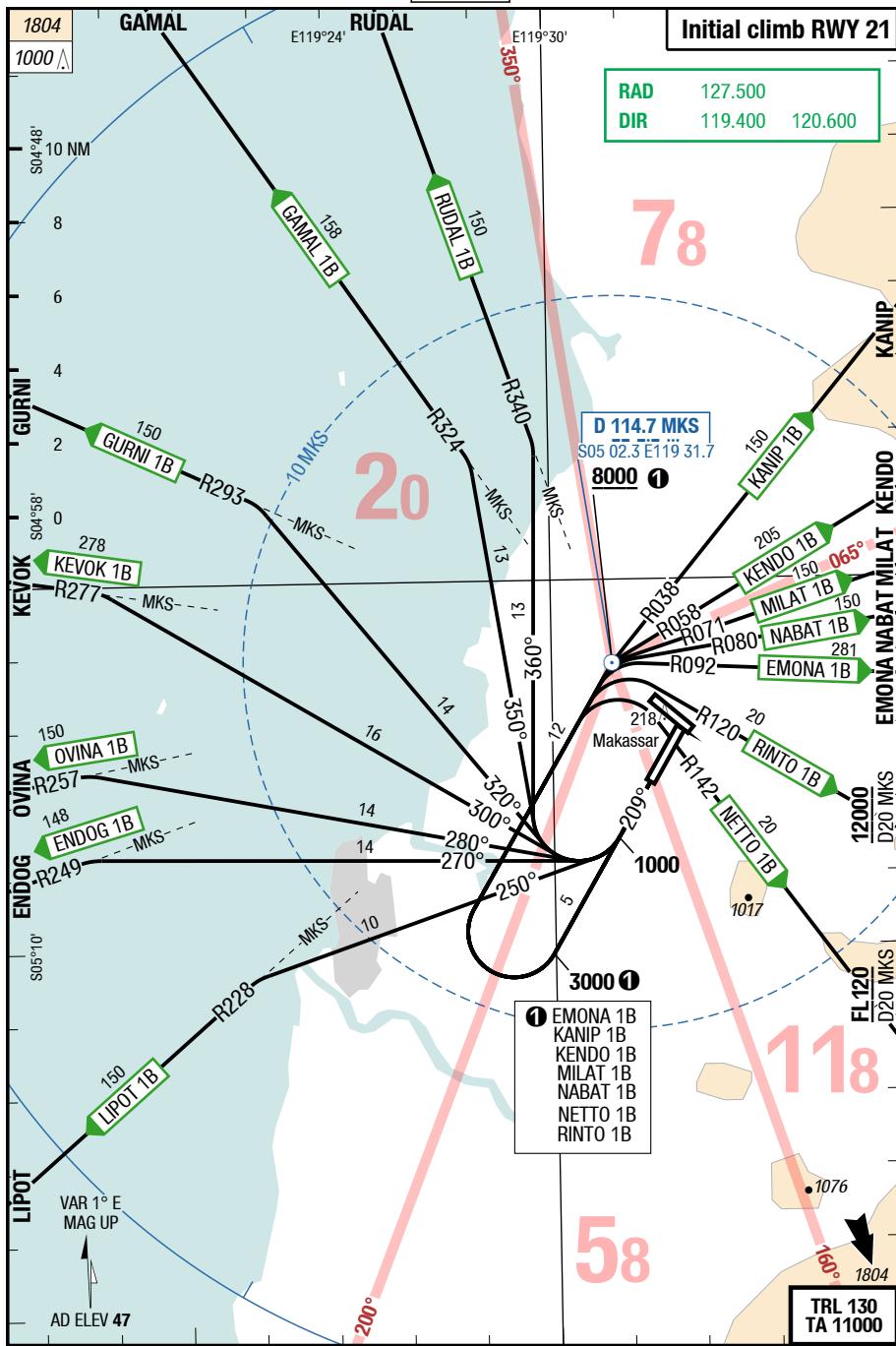
Indonesia Makassar Sultan Hasanuddin Intl

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UPG-WAAA

4-40

Initial Climb RWY 21



Changes: Track, VAR

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UPG-WAAA

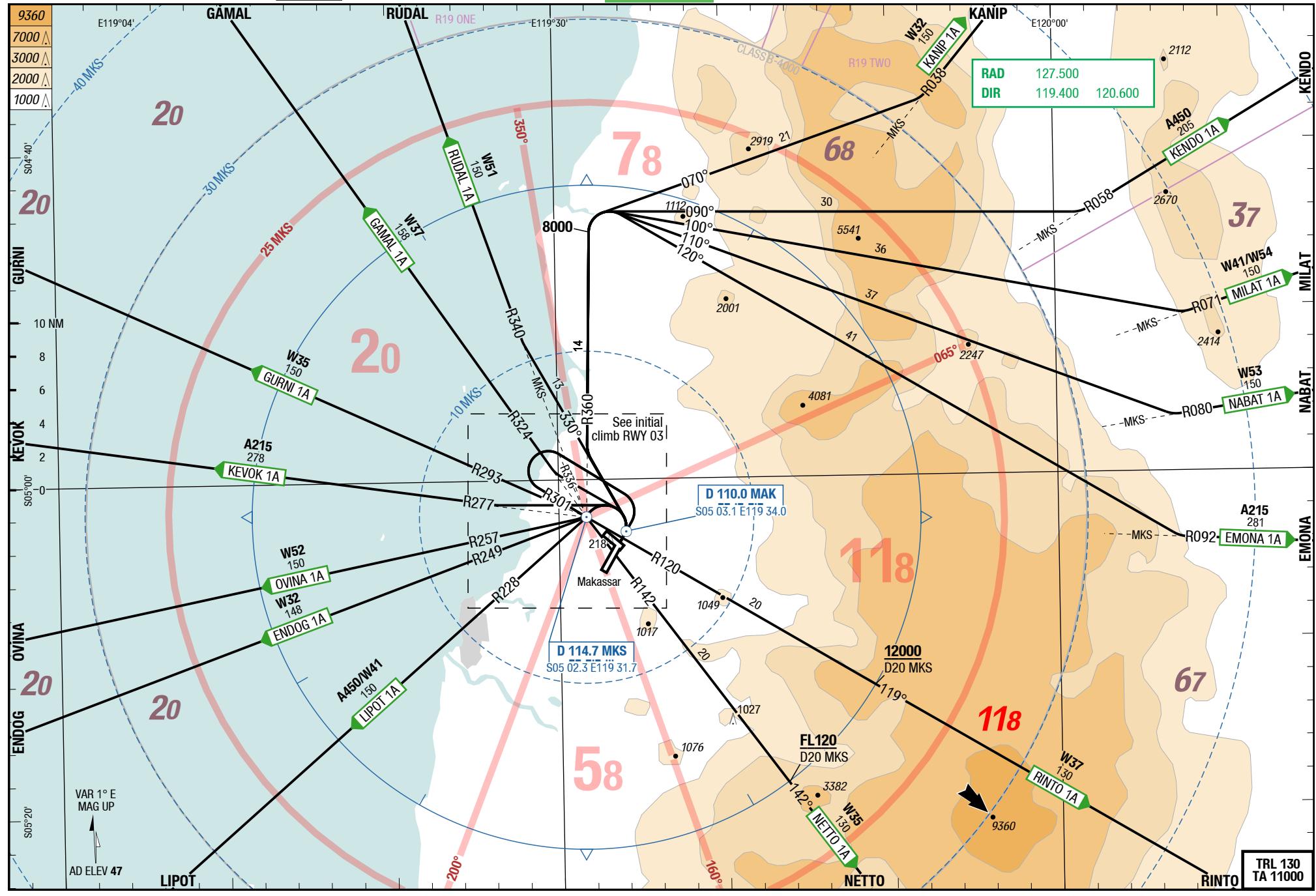
4-50

SID RWY 03

Sultan Hasanuddin Intl **Makassar** Indonesia

SID RWY 2

SID RWY 03



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Indonesia Makassar Sultan Hasanuddin Intl

Sultan Hasanuddin Intl **Makassar** Indonesia

UPG-WAAA

4-60

SID RWY 21

SID RWY 21

GURNI 554
3000
2000
1000
KEVORK S04°50'
S05°00'
OVINA
ENDOG

AD ELL

This map illustrates the airport's approach and departure procedures. Runway 20 is shown with a red arc and a 20° gradient. Runway 78 is indicated by a red circle with a 78° gradient. Runway 118 is shown with a red arc and a 118° gradient. The map includes several airways: A215, A450/W41, and W35. Key waypoints include GAMAL, RUDAL, KANIP, KENDO, MILAT, NABAT, EMONA, and NETTO. Specific coordinates for KANIP are listed as RAD 127.500, DIR 119.400, and 120.600. The map also shows the location of Makassar city center (218) and various terrain features like 4081, 3382, and 1049.

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UPG-WAAA**5-10****Hasanuddin 1/2**

SIDPT

HASANUDDIN 1 / HASANUDDIN 2

RWY 31 (309°)

DESIGNATOR	ROUTING	ALTITUDES
	Runway 31	
HASANUDDIN 1	at 800 to GAMAL RT join AWY W37 North westbound to ENDOG LT intercept R265 MKS - at D100 MKS join AWY W32 South westbound to LIPOT LT join AWY W41 to OVINA LT intercept R265 MKS - at D100 MKS join AWY W52	
HASANUDDIN 2	via MKS - at 3000 LT direct MKS to RINTO RT join AWY W37 South eastbound to KANIP LT join AWY W32 North eastbound to MILAT LT join AWY W54/W41 to NABAT LT join AWY W53 to LIPOT RT join AWY W41 to NETTO RT join AWY W35 South eastbound	MKS MNM 9000 D30 MKS MNM 12000 (for AWY W35 and W37)

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UPG-WAAA**5-20****Hasanuddin 3/4**

SIDPT

HASANUDDIN 3 / HASANUDDIN 4

RWY 31 (309°)

DESIGNATOR	ROUTING	ALTITUDES
	Runway 31	
HASANUDDIN 3	direct MKS - R360 MKS - at 3000 RT HDG 180° intercept R060 MKS to MKS to ENDOG join AWY W41 - at D100 MKS join AWY W32 to LIPOT join AWY W41 to OVINA join AWY W41 - at D100 MKS join AWY W52	MKS MNM 6000
HASANUDDIN 4	direct MKS - R360 MKS - at 6000 LT join AWY W37	

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UPG-WAAA**5-30****SID RWY 03**

SIDPT

**EMONA 1A / ENDOG 1A / GAMAL 1A / GURNI 1A / KANIP 1A / KENDO 1A / KEVOK 1A /
LIPOT 1A / MILAT 1A / NABAT 1A / NETTO 1A / OVINA 1A / RINTO 1A / RUDAL 1A
RWY 03 (029°)**

DESIGNATOR	ROUTING	ALTITUDES
EMONA 1A	029° - LT intercept R360 MKS - at 8000 RT 120° - intercept R092 MKS to EMONA (A215)	
ENDOG 1A	029° - LT 218° - intercept R249 MKS to ENDOG (W32)	
GAMAL 1A	029° - LT 300° - intercept R324 MKS to GAMAL (W37)	
GURNI 1A	029° - LT 270° intercept R293 MKS to GURNI (W35)	
KANIP 1A	029° - LT intercept R360 MKS - at 8000 RT 070° - intercept R038 MKS to KANIP (W32)	
KENDO 1A	029° - LT intercept R360 MKS - at 8000 RT 090° - intercept R058 MKS to KENDO (A450)	
KEVOK 1A	029° - LT 270° - intercept R277 MKS to KEVOK (A215)	
LIPOT 1A	029° - LT 210° - intercept R228 MKS to LIPOT (A450/W41)	
MILAT 1A	029° - LT intercept R360 MKS - at 8000 RT 100° - intercept R071 MKS to MILAT (W41/W54)	
NABAT 1A	029° - LT intercept R360 MKS - at 8000 RT 110° - intercept R080 MKS to NABAT (W53)	
NETTO 1A	029° - at 1000 LT 301° - crossing R336 MKS LT intercept R301 MKS inbound MKS - R142 MKS to NETTO (W35)	MKS MNM 8000 D20 MKS MNM 12000
OVINA 1A	029° - LT 228° - intercept R257 MKS to OVINA (W52)	
RINTO 1A	029° - at 1000 LT 301° - crossing R336 MKS LT intercept R301 MKS inbound MKS - R120 MKS to RINTO (W37)	MKS MNM 8000 D20 MKS MNM 12000
RUDAL 1A	029° - LT 330° - intercept R340 MKS to RUDAL (W51)	

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UPG-WAAA**5-40****SID RWY 21**

SIDPT

**EMONA 1B / ENDOG 1B / GAMAL 1B / GURNI 1B / KANIP 1B / KENDO 1B / KEVOK 1B /
LIPOT 1B / MILAT 1B / NABAT 1B / NETTO 1B / OVINA 1B / RINTO 1B / RUDAL 1B
RWY 21 (209°)**

DESIGNATOR	ROUTING	ALTITUDES
EMONA 1B	209° - at 3000 RT to MKS - R092 MKS to EMONA (A215)	MKS MNM 8000
ENDOG 1B	209° - at 1000 RT 270° - intercept R249 MKS to ENDOG (W32)	
GAMAL 1B	209° - at 1000 RT 350° - intercept R324 MKS to GAMAL (W37)	
GURNI 1B	209° - at 1000 RT 320° - intercept R293 MKS to GURNI (W35)	
KANIP 1B	209° - at 3000 RT to MKS - R038 MKS to KANIP (W32)	MKS MNM 8000
KENDO 1B	209° - at 3000 RT to MKS - R058 MKS to KENDO (A450)	MKS MNM 8000
KEVOK 1B	209° - at 1000 RT 300° - intercept R277 MKS to KEVOK (A215)	
LIPOT 1B	209° - at 1000 RT 250° - intercept R228 MKS to LIPOT (A450/W41)	
MILAT 1B	209° - at 3000 RT to MKS - R071 MKS to MILAT (W41/W54)	MKS MNM 8000
NABAT 1B	209° - at 3000 RT to MKS - R080 MKS to NABAT (W53)	MKS MNM 8000
NETTO 1B	209° - at 3000 RT to MKS - R142 MKS to NETTO (W35)	MKS MNM 8000 D20 MKS MNM 12000
OVINA 1B	209° - at 1000 RT 280° - intercept R257 MKS to OVINA (W52)	
RINTO 1B	209° - at 3000 RT to MKS - R120 MKS to RINTO (W37)	MKS MNM 8000 D20 MKS MNM 12000
RUDAL 1B	209° - at 1000 RT 360° - intercept R340 MKS to RUDAL (W51)	

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STARs RWY 21

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UPG-WAAA

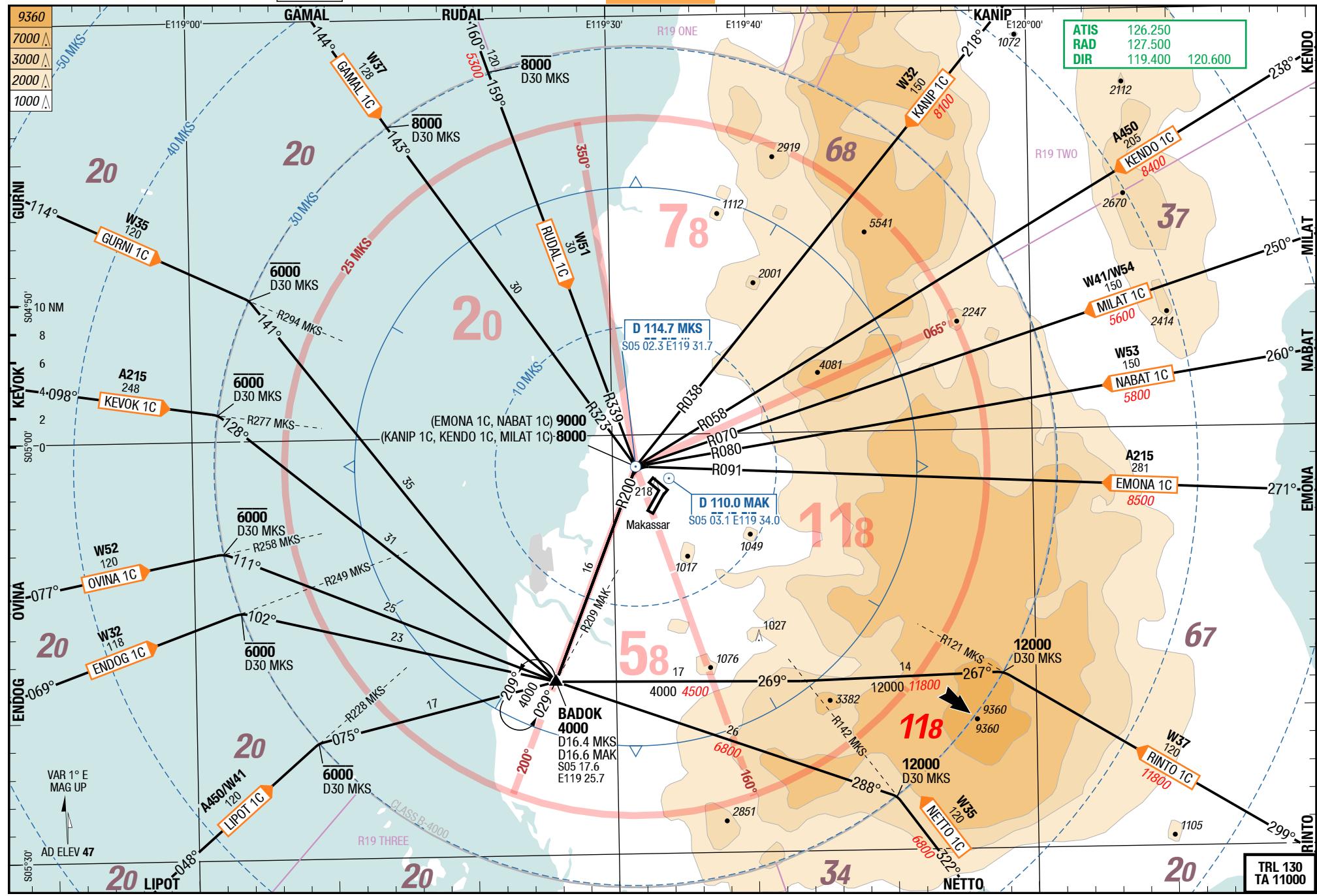
-10

STARs RWY 03

STAR

STAR

STARs RWY 03



Changes: Track, FREQ, VAR, OBST

09-JUN-2016

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UPG-WAAA

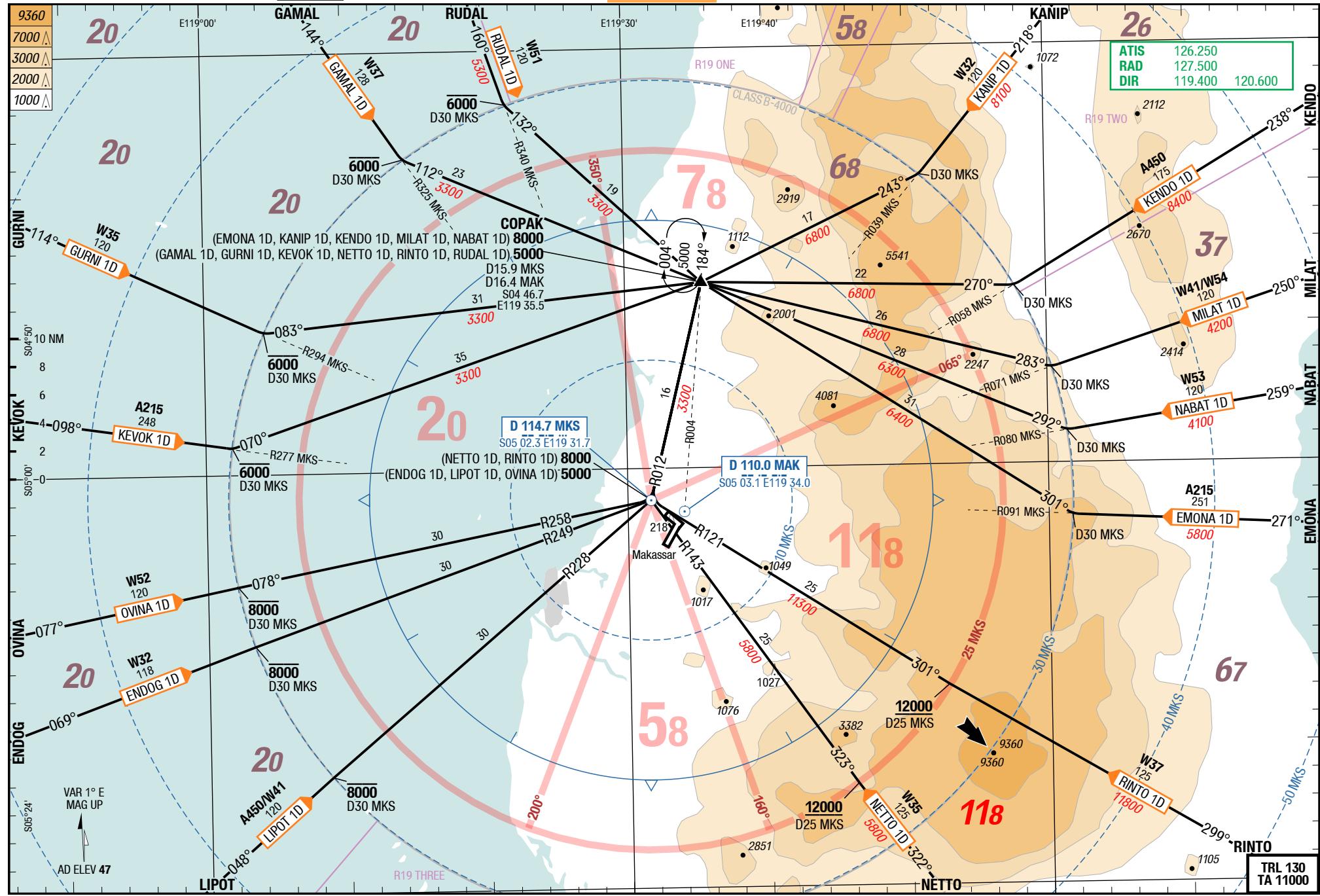
6-20

STARs RWY 21

STAR

STAR

STARs RWY 21



09-JUN-2016

Indonesia Makassar Sultan Hasanuddin Intl

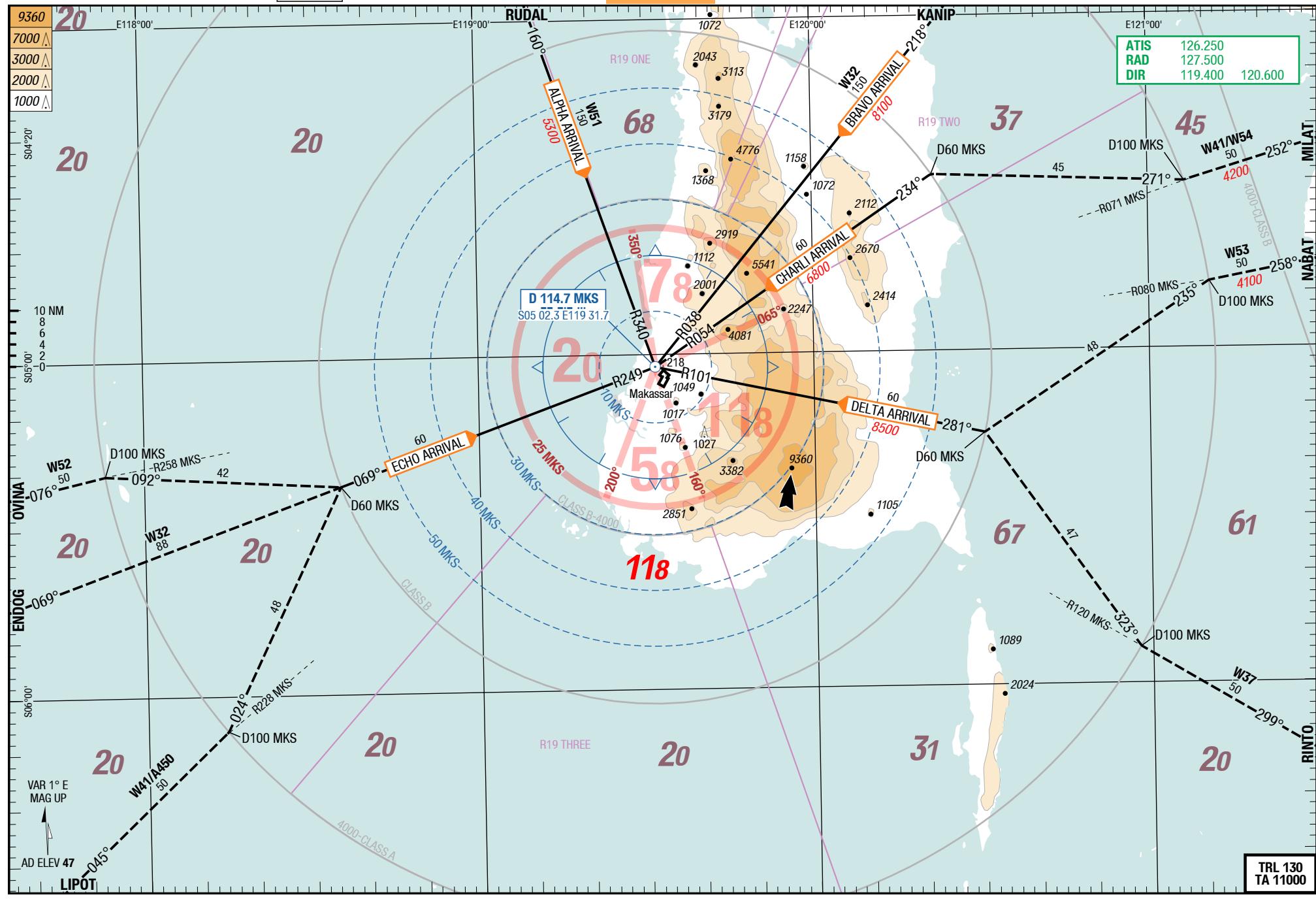
STAR

STAR

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UPG-WAAA

6-30 STARs (RWY 13/31 ARRIVALS)



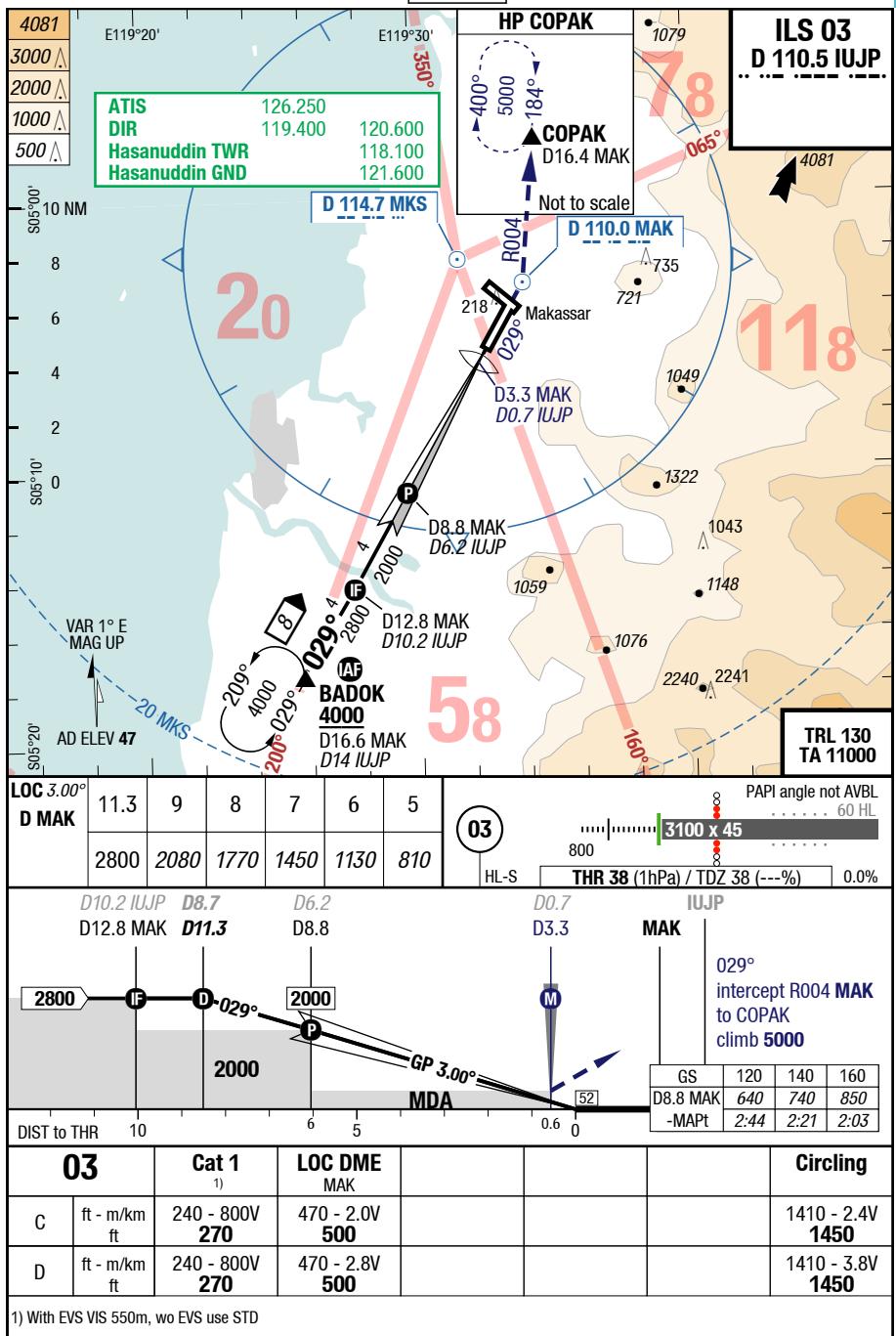
Changes: Track, FREQ, VAR, OBST

09-JUN-2016

UPG-WAAA

7-10

ILS 03



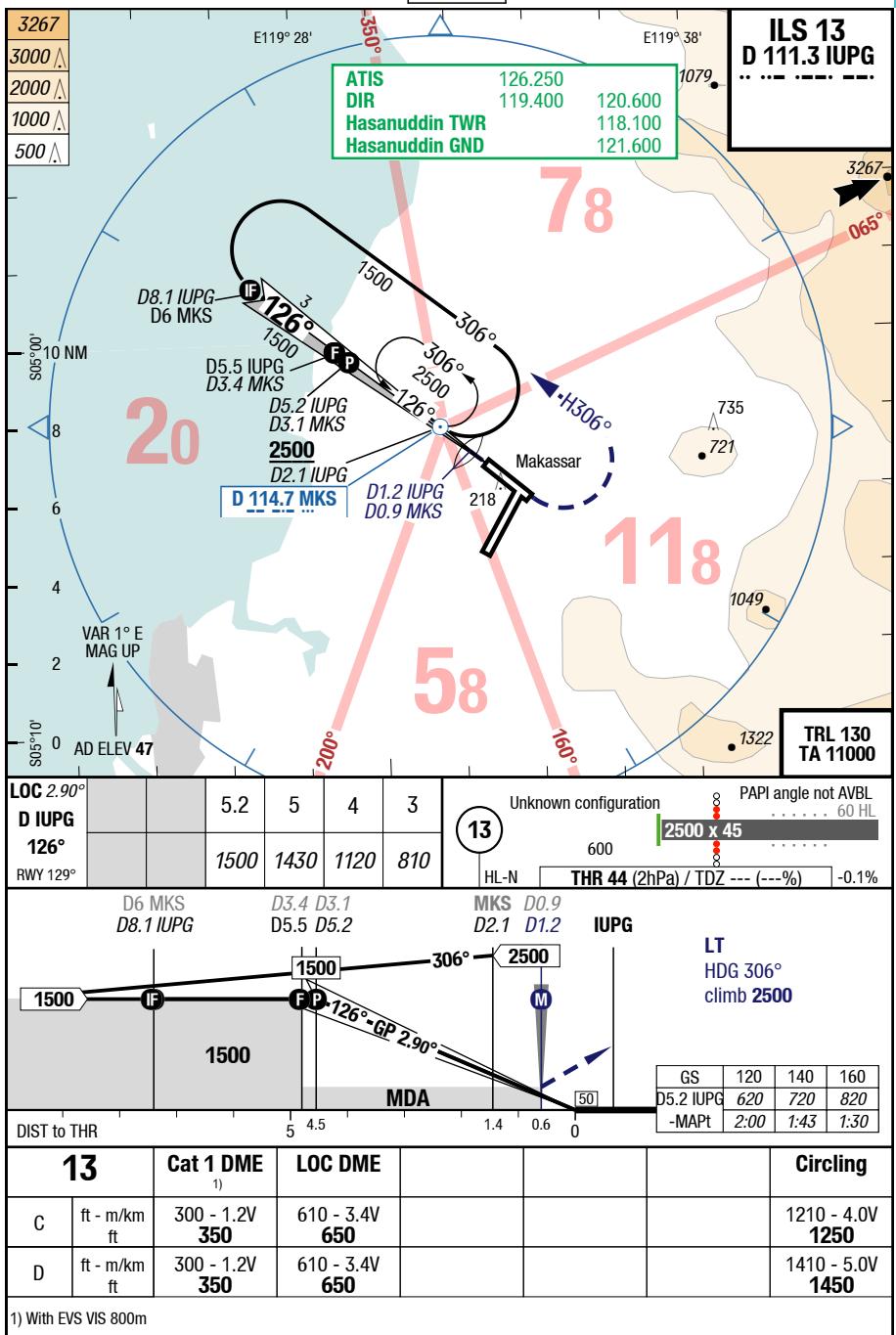
1) With EVS VIS 550m, wo EVS use STD

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UPG-WAAA

7-20

ILS 13

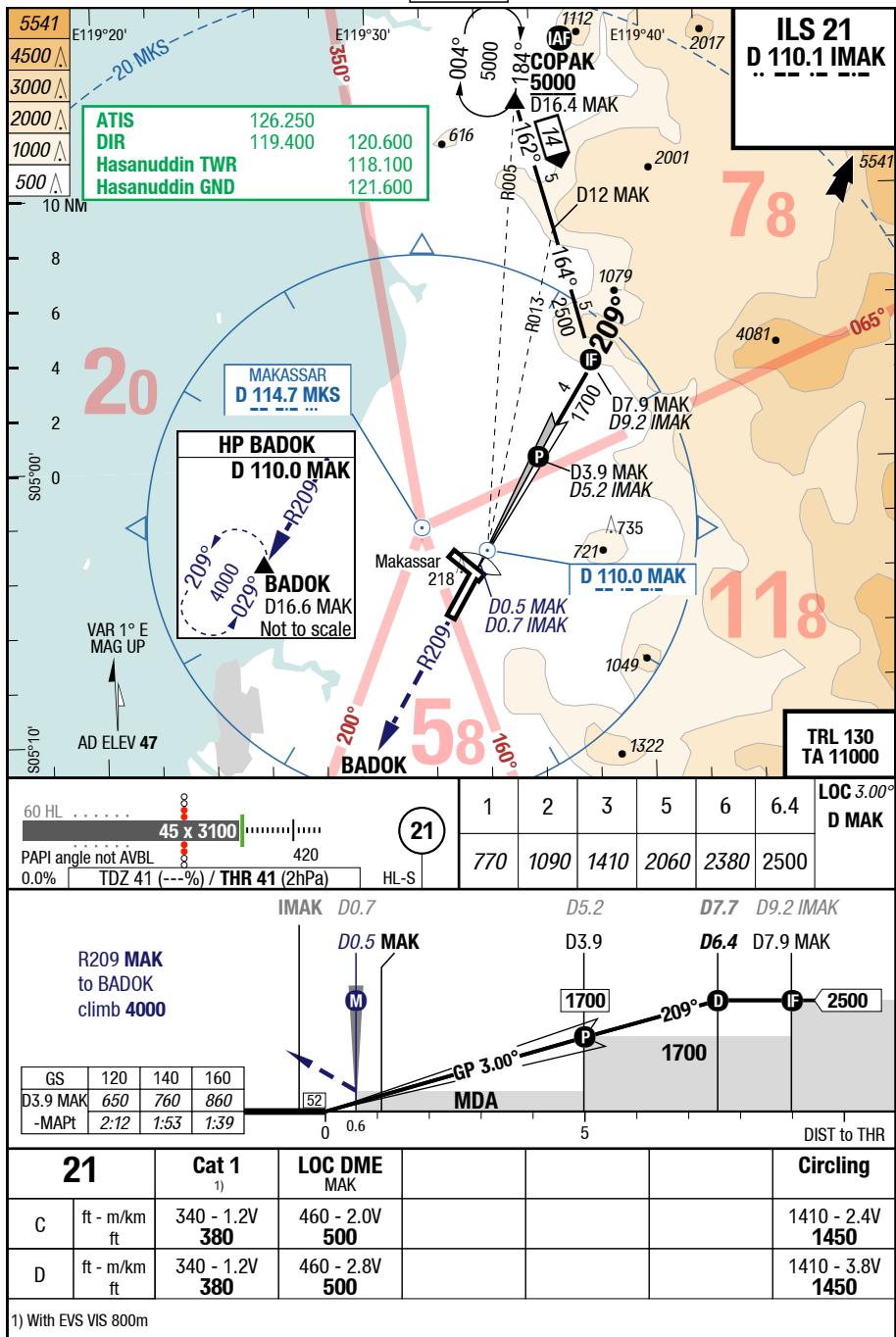


1) With EVS VIS 800m

Changes: FAT, Track, DIST ALT table, MIN, Profile, ROD

7-30

ILS 21



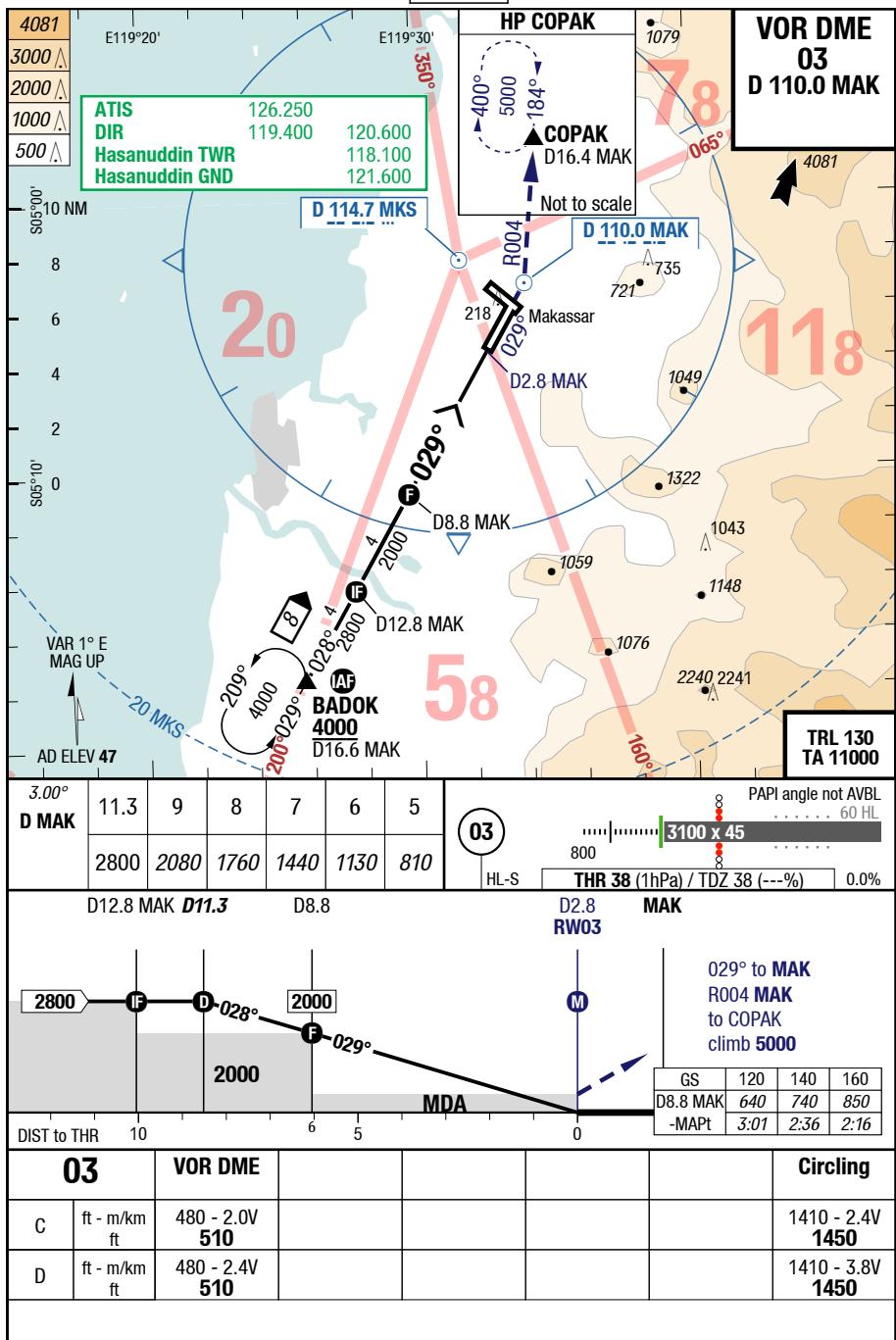
09-JUN-2016

UPG-WAAA

7-40

VOR DME 03

IAC



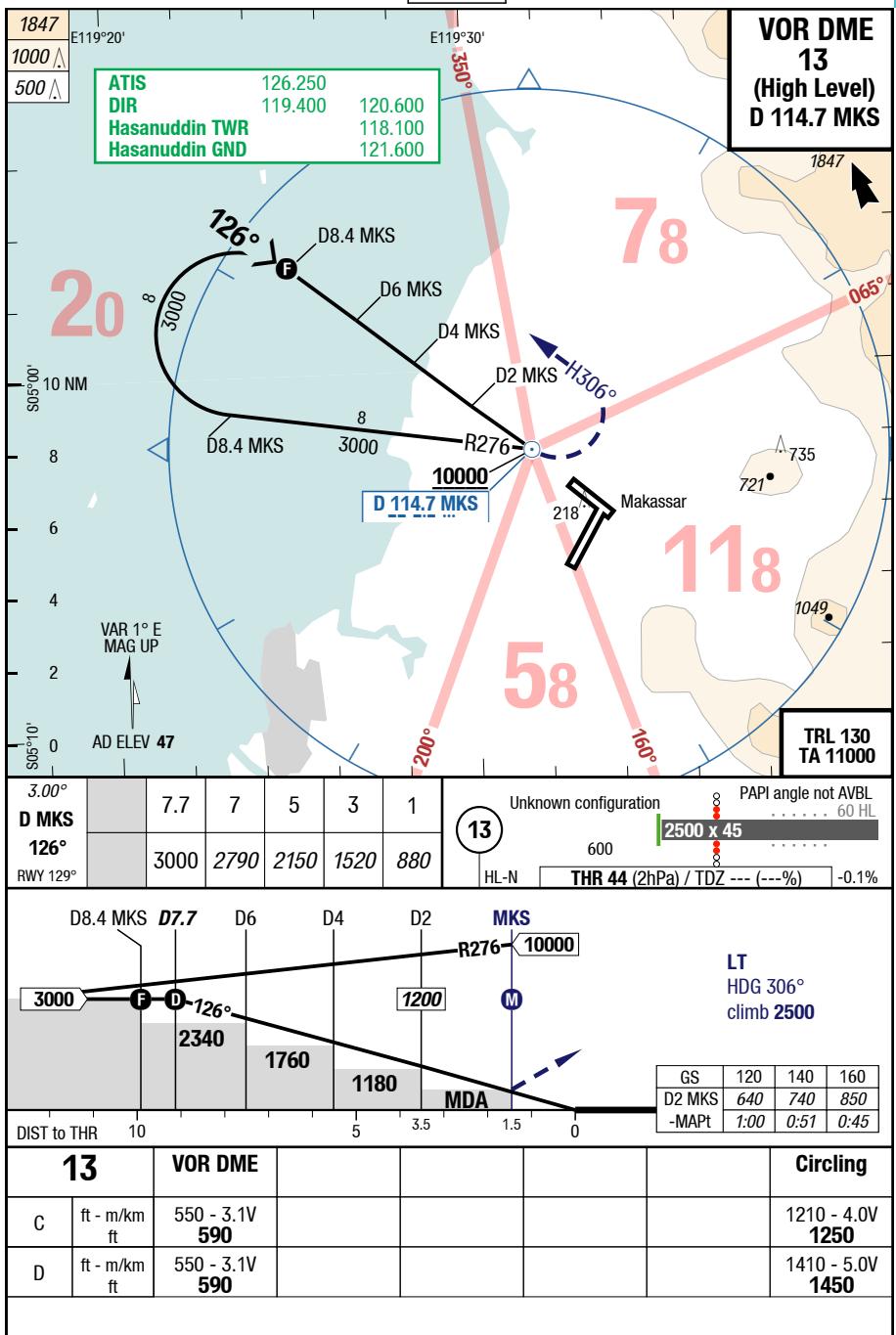
Changes: MIN, Track, FAT, VAR

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UPG-WAAA

7-50

VOR DME 13 (High Level)



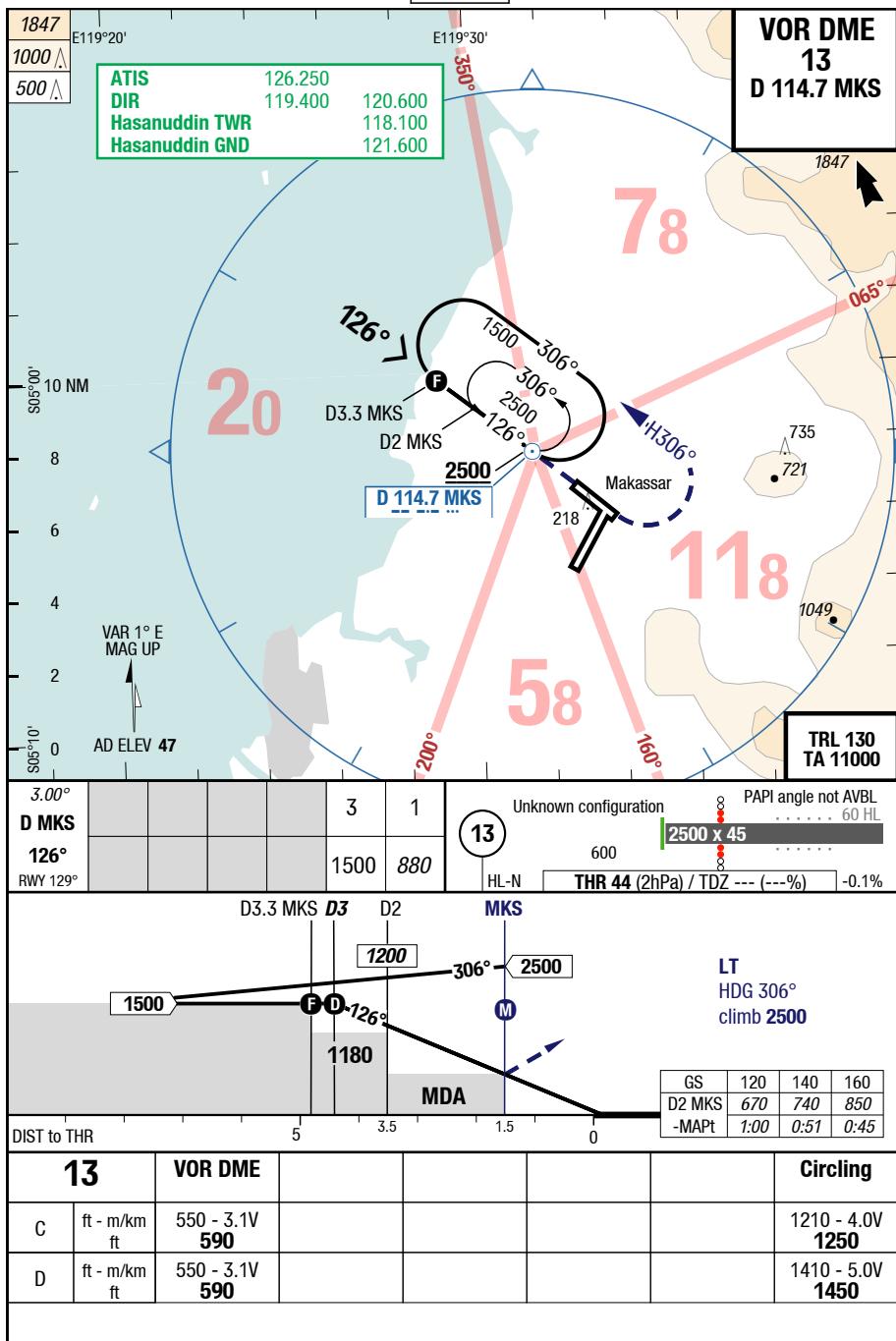
Changes: MIN, FAT, Track

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UPG-WAAA

7-60

VOR DME 13

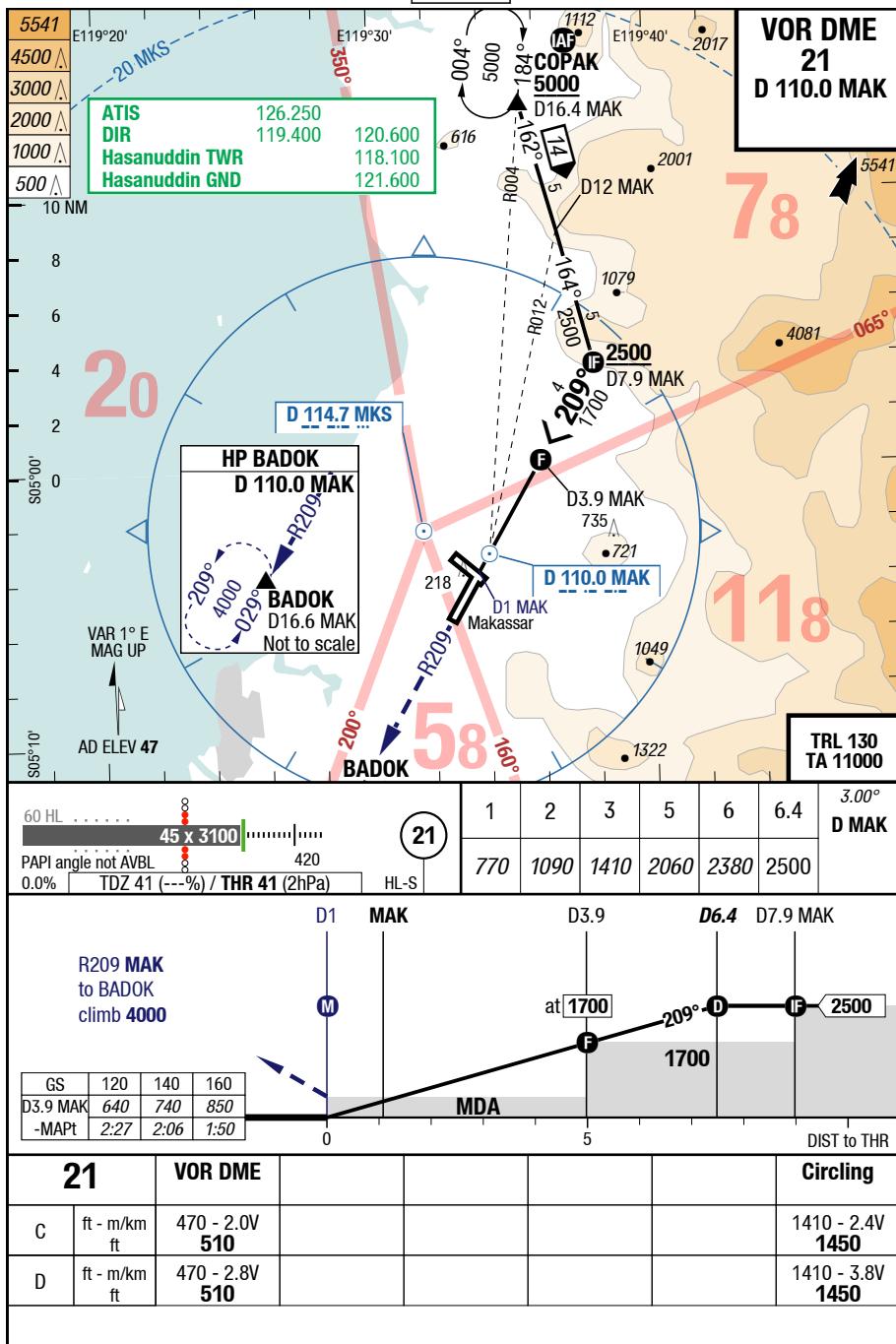


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UPG-WAAA

7-70

VOR DME 21



Changes: MIN, Track, FAT, ALT, VAR

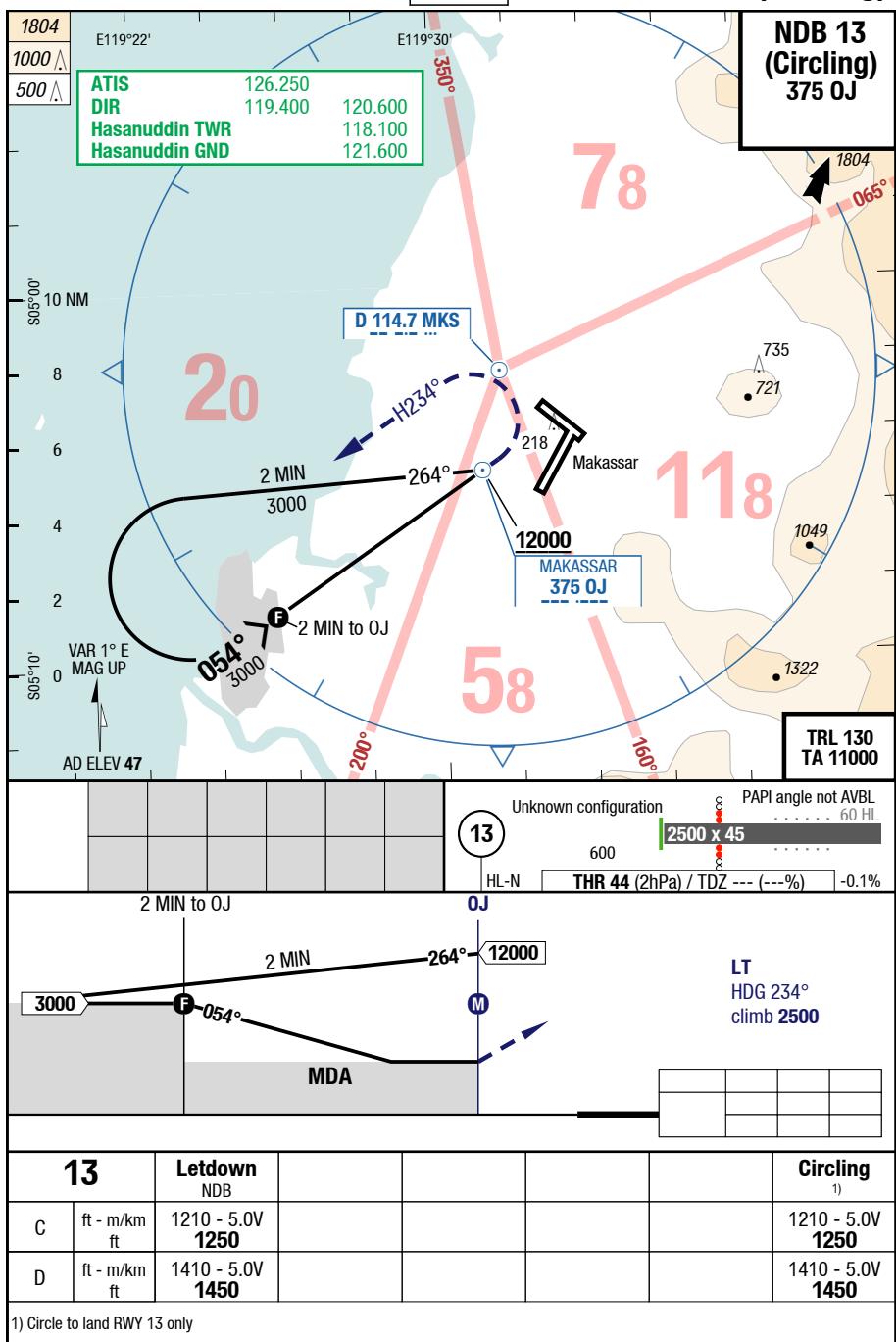
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7-80

NDB 13 (Circling)

IAC



Changes: Track, FAT, VAR

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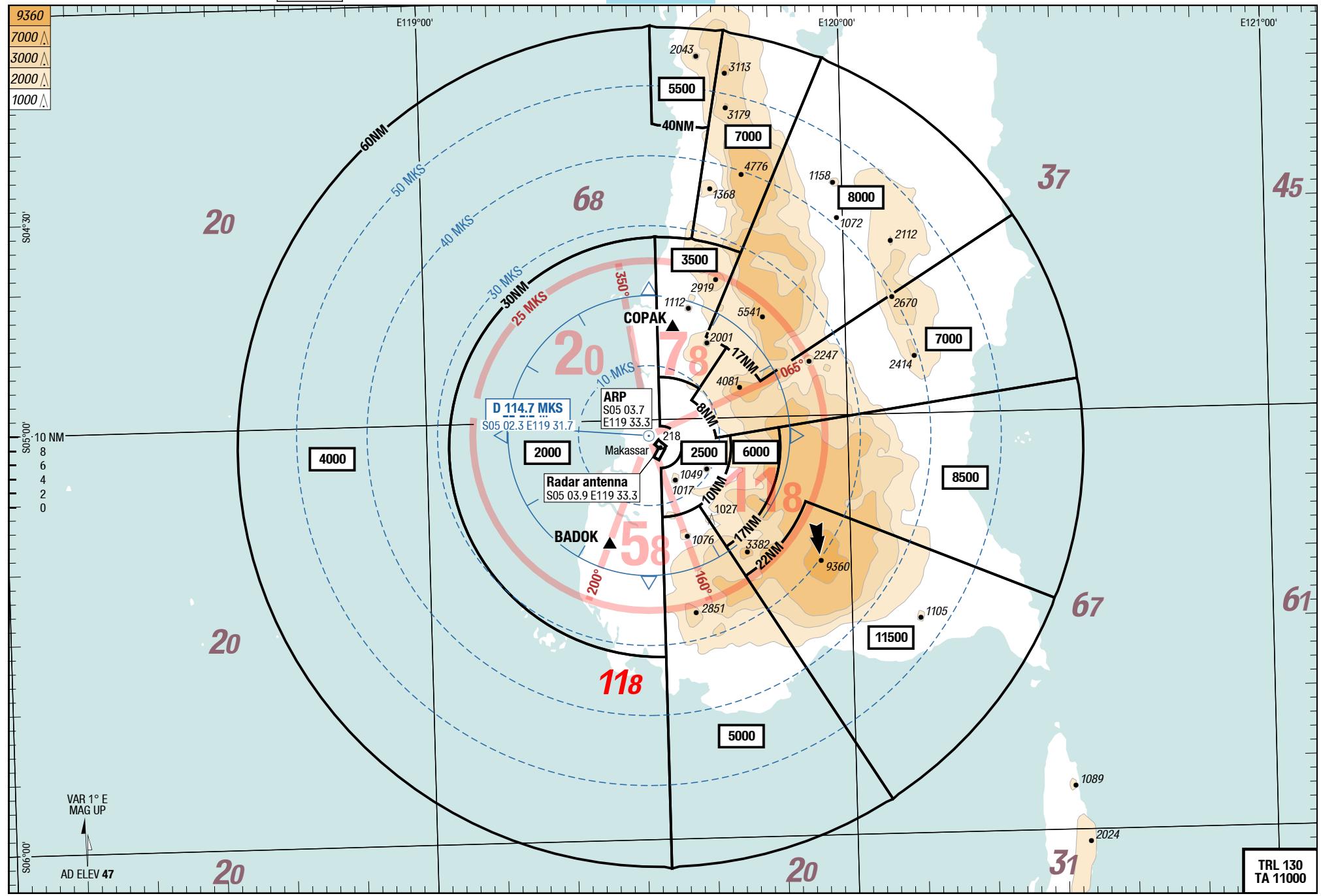
8-10

MRC

MRC

WBC

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Changes: OBST, VAR