

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

**TRANSITION ALTITUDE  
6000**

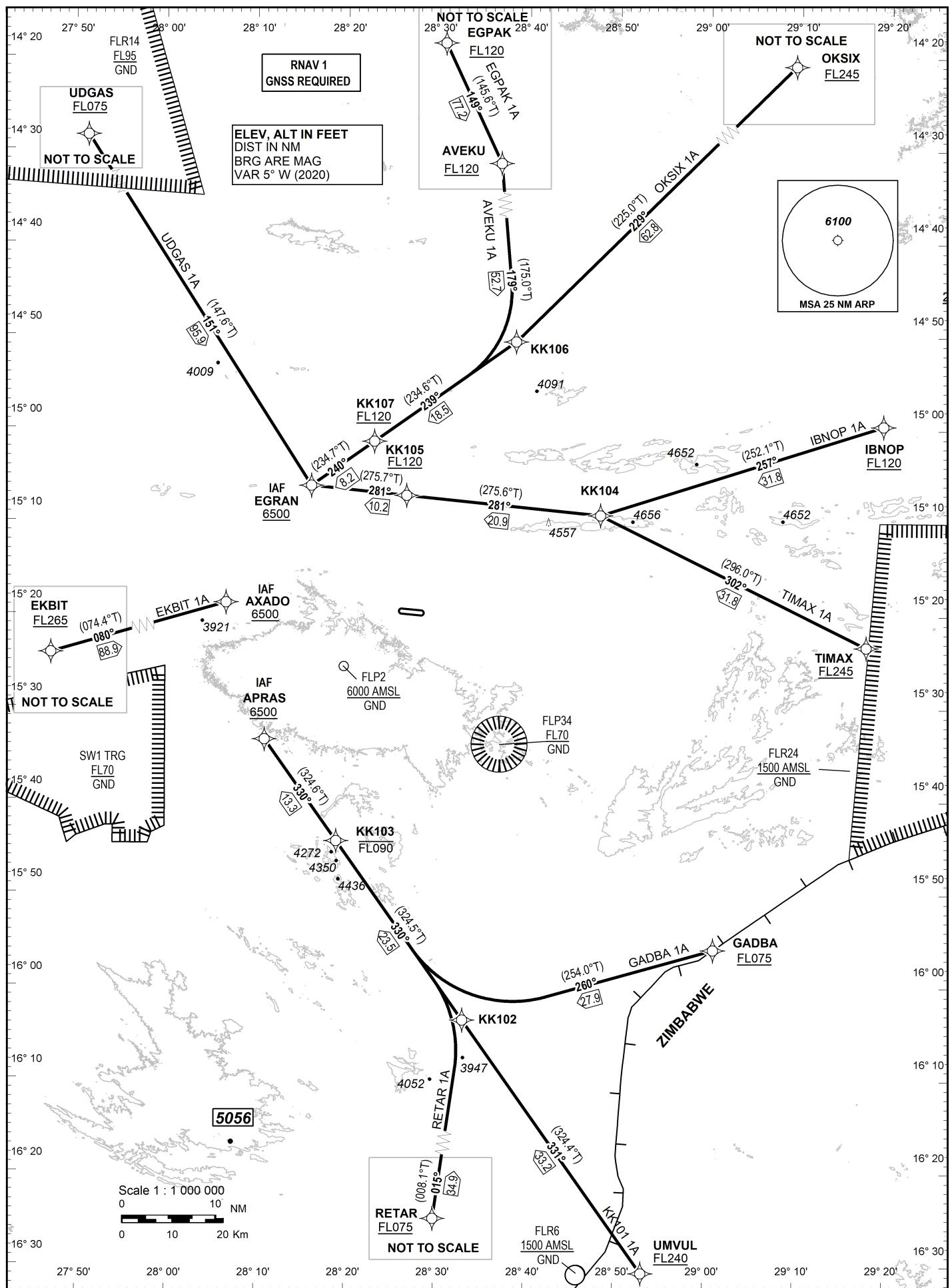
APP	121.300
	120.100
TWR	118.100

## KENNETH KAUNDA INTL/Lusaka

(FLKK)

**RNAV STAR RWY 10**

AVEKU 1A, EGPAK 1A, EKBIT 1A, GADBA 1A, IBNOP 1A, OKSIX 1A, RETAR 1A, TIMAX 1A, UDGAS 1A, UMVUL 1A



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**TABULAR DESCRIPTION****RNAV STAR RWY 10****AVEKU 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	AVEKU	-	-	-	-	-	+FL120	-	-	-	RNAV 1
020	TF	KK106	-	179 (175.0)	-	52.7	-	-	-	-	-	RNAV 1
030	TF	KK107	-	239 (234.6)	-	18.5	-	+FL120	-	-	-	RNAV 1
040	TF	EGRAN	-	240 (234.7)	-	8.2	-	+6500	-	-	-	RNAV 1

**EGPAK 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
10	IF	EGPAK	-	-	-3.4	-	-	+FL120	-	-	-	RNAV 1
20	TF	AVEKU	-	149 (145.6)	-	77.2	-	-	-	-	-	RNAV 1
30	TF	KK106	-	179 (175.0)	-	51.9	-	-	-	-	-	RNAV 1
40	TF	KK107	-	239 (234.6)	-	18.0	-	+FL120	-	-	-	RNAV 1
50	TF	EGRAN	-	240 (234.7)	-	8.2	-	+6500	-	-	-	RNAV 1

**EKBIT 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	EKBIT	-	-	-	-	-	+FL265	-	-	-	RNAV 1
020	TF	AXADO	-	080 (074.4)	-	88.9	-	+6500	-	-	-	RNAV 1

**GADBA 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	GADBA	-	-	-	-	-	+FL075	-	-	-	RNAV 1
020	TF	KK102	-	260 (254.0)	-	27.9	-	-	-	-	-	RNAV 1
030	TF	KK103	-	330 (324.5)	-	23.5	-	-FL090	-	-	-	RNAV 1
040	TF	APRAS	-	330 (324.6)	-	13.3	-	+6500	-	-	-	RNAV 1

**IBNOP 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	IBNOP	-	-	-	-	-	+FL120	-	-	-	RNAV 1
020	TF	KK104	-	257 (252.1)	-	31.8	-	-	-	-	-	RNAV 1
030	TF	KK105	-	281 (275.6)	-	20.9	-	+FL120	-	-	-	RNAV 1
040	TF	EGRAN	-	281 (275.7)	-	10.2	-	+6500	-	-	-	RNAV 1

**OKSIX 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	OKSIX	-	-	-	-	-	+FL245	-	-	-	RNAV 1
020	TF	KK106	-	229 (225.0)	-	62.8	-	-	-	-	-	RNAV 1
030	TF	KK107	-	239 (234.6)	-	18.5	-	+FL120	-	-	-	RNAV 1
040	TF	EGRAN	-	240 (234.7)	-	8.2	-	+6500	-	-	-	RNAV 1

**RETAR 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	RETAR	-	-	-	-	-	+FL075	-	-	-	RNAV 1
020	TF	KK102	-	015 (008.1)	-	34.9	-	-	-	-	-	RNAV 1
030	TF	KK103	-	330 (324.5)	-	23.2	-	-FL090	-	-	-	RNAV 1
040	TF	APRAS	-	330 (324.6)	-	13.3	-	+6500	-	-	-	RNAV 1

**TIMAX 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	TIMAX	-	-	-	-	-	+FL245	-	-	-	RNAV 1
020	TF	KK104	-	302 (296.0)	-	31.8	-	-	-	-	-	RNAV 1
030	TF	KK105	-	281 (275.6)	-	20.9	-	+FL120	-	-	-	RNAV 1
040	TF	EGRAN	-	281 (275.7)	-	10.2	-	+6500	-	-	-	RNAV 1

**UDGAS 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	UDGAS	-	-	-	-	-	+FL075	-	-	-	RNAV 1
020	TF	EGRAN	-	151 (147.6)	-	95.9	-	+6500	-	-	-	RNAV 1

**UMVUL 1A**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	UMVUL	-	-	-	-	-	+FL240	-	-	-	RNAV 1
020	TF	KK102	-	331 (324.4)	-	33.2	-	-	-	-	-	RNAV 1
030	TF	KK103	-	330 (324.5)	-	23.5	-	-FL090	-	-	-	RNAV 1
040	TF	APRAS	-	330 (324.6)	-	13.3	-	+6500	-	-	-	RNAV 1

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INSTRUMENT (STAR) - ICAO****KENNETH KAUNDA INTL/Lusaka**

(FLKK)

**RNAV STAR RWY 10**

AVEKU 1A, EGPAK 1A, EKBIT 1A, GADBA 1A, IBNOP 1A, OKSIX 1A, RETAR 1A, TIMAX 1A, UDGAS 1A, UMVUL 1A

**WAYPOINT LIST  
RNAV STAR RWY 10**

WaypointIdentifier	Coordinates		WaypointIdentifier	Coordinates	
APRAS	S 15 33 33.8	E 028 10 55.0	KK106	S 14 50 42.0	E 028 38 35.9
AVEKU	S 13 57 60.0	E 028 33 54.0	KK107	S 15 01 28.3	E 028 22 58.4
AXADO	S 15 18 50.6	E 028 06 36.8	OKSIX	S 14 06 12.0	E 029 24 30.0
EGPAK	S 12 54 06.0	E 027 49 06.0	RETAR	S 16 37 46.8	E 028 28 18.0
EGRAN	S 15 06 15.1	E 028 16 01.4	TIMAX	S 15 23 24.0	E 029 17 36.0
EKBIT	S 15 43 05.0	E 026 37 59.0	UDGAS	S 13 44 59.6	E 027 22 58.5
GADBA	S 15 56 03.2	E 029 00 53.2	UMVUL	S 16 30 52.0	E 028 53 08.0
IBNOP	S 14 59 36.0	E 029 19 18.0			
KK102	S 16 03 42.8	E 028 33 03.9			
KK103	S 15 44 29.1	E 028 18 55.4			
KK104	S 15 09 20.8	E 028 48 03.0			
KK105	S 15 07 16.7	E 028 26 33.9			

**ROUTING**

NAME	TEXT
AVEKU 1A	From AVEKU track 179° to KK106, track 239° to KK107, track 240° to EGRAN. MEL/MEA: AVEKU AT or ABOVE FL120, KK107 AT or ABOVE FL120, EGRAN AT or ABOVE 6500'.
EGPAK 1A	From EGPAK track 149° to AVEKU, track 179° to KK106, track 239° to KK107, track 240° to EGRAN. MEL/MEA: EGPAK AT or ABOVE FL120, KK107 AT or ABOVE FL120, EGRAN AT or ABOVE 6500'.
EKBIT 1A	From EKBIT track 080° to AXADO. MEL/MEA: EKBIT AT or ABOVE FL265, AXADO AT or ABOVE 6500'.
GADBA 1A	From GADBA track 260° to KK102, track 330° to KK103, track 330° to APRAS. MEL/MEA: GADBA AT or ABOVE FL075, KK103 AT or BELOW FL090, APRAS AT or ABOVE 6500'.
IBNOP 1A	From IBNOP track 257° to KK104, track 281° to KK105, track 281° to EGRAN. MEL/MEA: IBNOP AT or ABOVE FL120, KK105 AT or ABOVE FL120, EGRAN AT or ABOVE 6500'.
OKSIX 1A	From OKSIX track 229° to KK106, track 239° to KK107, track 240° to EGRAN. MEL/MEA: OKSIX AT or ABOVE FL245, KK107 AT or ABOVE FL120, EGRAN AT or ABOVE 6500'.
RETAR 1A	From RETAR track 015° to KK102, track 330° to KK103, track 330° to APRAS. MEL/MEA: RETAR AT or ABOVE FL075, KK103 AT or BELOW FL090, APRAS AT or ABOVE 6500'.
TIMAX 1A	From TIMAX track 302° to KK104, track 281° to KK105, track 281° to EGRAN. MEL/MEA: TIMAX AT or ABOVE FL245, KK105 AT or ABOVE FL120, EGRAN AT or ABOVE 6500'.
UDGAS 1A	From UDGAS track 151° to EGRAN. MEL/MEA: UDGAS AT or ABOVE FL075, EGRAN AT or ABOVE 6500'.
UMVUL 1A	From UMVUL track 331° to KK102, track 330° to KK103, track 330° to APRAS. MEL/MEA: UMVUL AT or ABOVE FL240, KK103 AT or BELOW FL090, APRAS AT or ABOVE 6500'.

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INSTRUMENT (STAR) - ICAO**

**TRANSITION ALTITUDE  
6000**

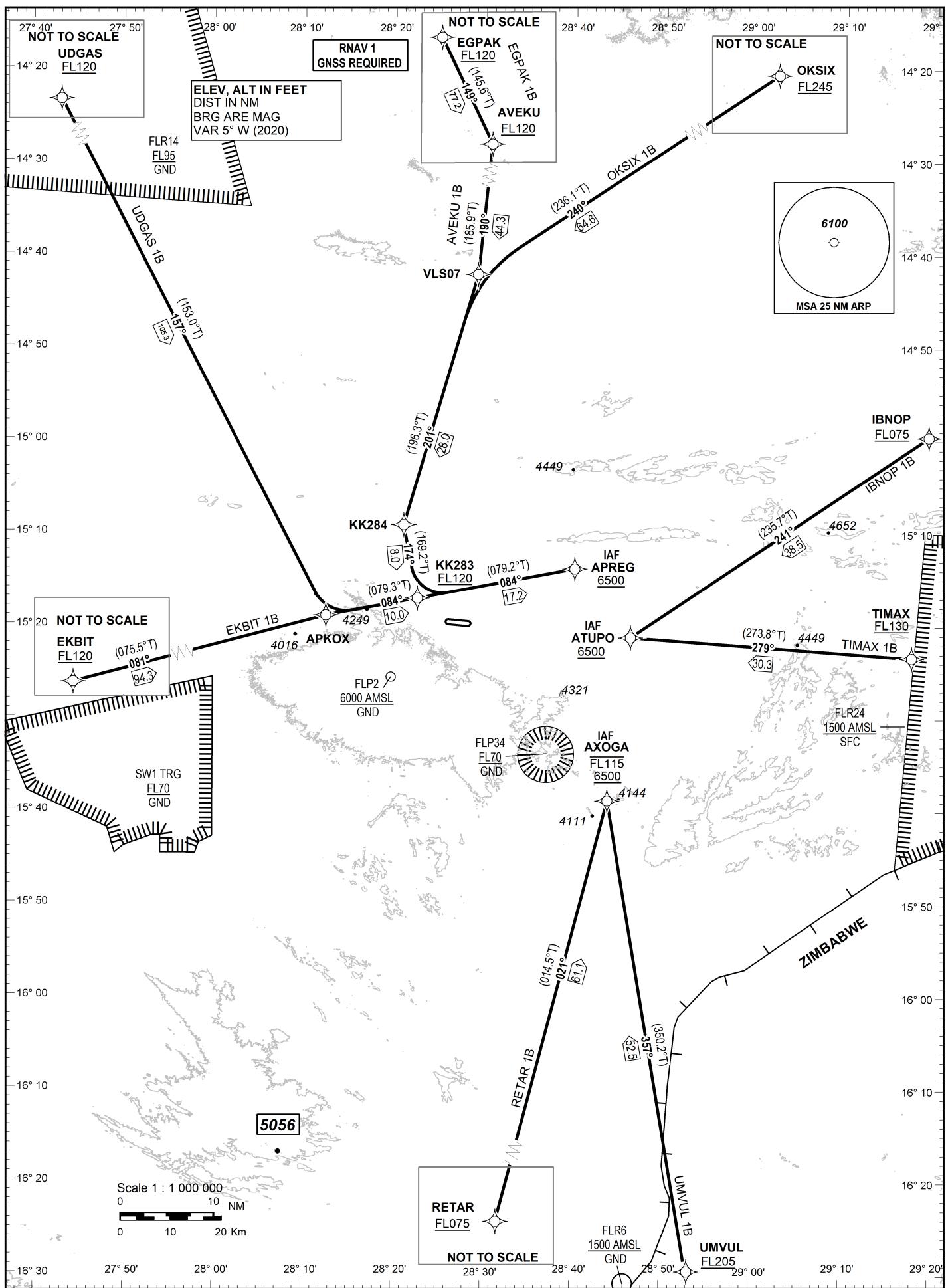
**APP 121.300  
120.100  
TWR 118.100**

**KENNETH KAUNDA INTL/Lusaka**

**(FLKK)**

**RNAV STAR RWY 28**

AVEKU 1B, EGPAK 1B, EKBIT 1B, IBNOP 1B, OKSIX 1B, RETAR 1B, TIMAX 1B, UDGAS 1B, UMVUL 1B



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**RNAV STAR RWY 28**

AVEKU 1B, EGPAK 1B, EKBIT 1B, IBNOP 1B, OKSIX 1B, RETAR 1B, TIMAX 1B, UDGAS 1B, UMVUL 1B

**TABULAR DESCRIPTION**

**RNAV STAR RWY 28**

**AVEKU 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	AVEKU	-	-	-	-	-	+FL120	-	-	-	RNAV 1
020	TF	VLS07	-	190 (185.9)	-	44.3	-	-	-	-	-	RNAV 1
030	TF	KK284	-	201 (196.3)	-	28.0	-	-	-	-	-	RNAV 1
040	TF	KK283	-	174 (169.2)	-	8.0	-	+FL120	-	-	-	RNAV 1
050	TF	APREG	-	084 (079.2)	-	17.2	-	+6500	-	-	-	RNAV 1

**EGPAK 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
10	IF	EGPAK	-	-	-	-	-	+FL120	-	-	-	RNAV 1
20	TF	AVEKU	-	149 (145.6)	-	77.2	-	-	-	-	-	RNAV 1
30	TF	VLS07	-	190 (185.9)	-	44.3	-	-	-	-	-	RNAV 1
40	TF	KK284	-	201 (196.3)	-	28.0	-	-	-	-	-	RNAV 1
50	TF	KK283	-	174 (169.2)	-	7.3	-	-	-	-	-	RNAV 1
60	TF	APREG	-	084 (079.2)	-	16.5	-	+6500	-	-	-	RNAV 1

**EKBIT 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	EKBIT	-	-	-	-	-	+FL120	-	-	-	RNAV 1
020	TF	APKOK	-	081 (075.5)	-	94.3	-	-	-	-	-	RNAV 1
030	TF	KK283	-	084 (079.3)	-	10.0	-	+FL120	-	-	-	RNAV 1
040	TF	APREG	-	084 (079.2)	-	17.2	-	+6500	-	-	-	RNAV 1

**IBNOP 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	IBNOP	-	-	-	-	-	+FL075	-	-	-	RNAV 1
020	TF	ATUPO	-	241 (235.7)	-	38.5	-	+6500	-	-	-	RNAV 1

**OKSIX 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	OKSIX	-	-	-	-	-	+FL245	-	-	-	RNAV 1
020	TF	VLS07	-	240 (236.1)	-	64.6	-	-	-	-	-	RNAV 1
030	TF	KK284	-	201 (196.3)	-	28.0	-	-	-	-	-	RNAV 1
040	TF	KK283	-	174 (169.2)	-	8.0	-	+FL120	-	-	-	RNAV 1
050	TF	APREG	-	084 (079.2)	-	17.2	-	+6500	-	-	-	RNAV 1

**RETAR 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	RETAR	-	-	-	-	-	+FL075	-	-	-	RNAV 1
020	TF	AXOGA	-	021 (014.5)	-	61.1	-	-	-FL115 +6500	-	-	RNAV 1

**TIMAX 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	TIMAX	-	-	-	-	-	+FL130	-	-	-	RNAV 1
020	TF	ATUPO	-	279 (273.8)	-	30.3	-	+6500	-	-	-	RNAV 1

**UDGAS 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	UDGAS	-	-	-	-	-	+FL120	-	-	-	RNAV 1
020	TF	APKOK	-	157 (153.0)	-	105.3	-	-	-	-	-	RNAV 1
030	TF	KK283	-	084 (079.3)	-	10.0	-	+FL120	-	-	-	RNAV 1
040	TF	APREG	-	084 (079.2)	-	17.2	-	+6500	-	-	-	RNAV 1

**UMVUL 1B**

Serial Number	Path Descriptor	Waypoint Identifier	Fly-over	Course M°(T°)	Magnetic Variation (°)	Distance (NM) / Duration	Turn Direction	Altitude (FT)	Speed Limit (KT)	VPA (%)	Rec Navaids	Navigation Specification
010	IF	UMVUL	-	-	-	-	-	+FL205	-	-	-	RNAV 1
020	TF	AXOGA	-	357 (350.2)	-	52.5	-	-	-FL115 +6500	-	-	RNAV 1

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INSTRUMENT (STAR) - ICAO****KENNETH KAUNDA INTL/Lusaka**

(FLKK)

**RNAV STAR RWY 28**

AVEKU 1B, EGPAK 1B, EKBIT 1B, IBNOP 1B, OKSIX 1B, RETAR 1B, TIMAX 1B, UDGAS 1B, UMVUL 1B

**WAYPOINT LIST  
RNAV STAR RWY 28**

WaypointIdentifier	Coordinates		WaypointIdentifier	Coordinates	
APKOX	S 15 19 05.0	E 028 12 26.6	TIMAX	S 15 23 24.0	E 029 17 36.0
APREG	S 15 13 58.0	E 028 40 05.4	UDGAS	S 13 44 59.6	E 027 22 58.5
ATUPO	S 15 21 21.7	E 028 46 20.0	UMVUL	S 16 30 52.0	E 028 53 08.0
AVEKU	S 13 57 60.0	E 028 33 54.0	VLS07	S 14 42 17.0	E 028 29 11.0
AXOGA	S 15 38 57.6	E 028 43 50.8			
EGPAK	S 12 54 06.0	E 027 49 06.0			
EKBIT	S 15 43 05.0	E 026 37 59.0			
IBNOP	S 14 59 36.0	E 029 19 18.0			
KK283	S 15 17 12.6	E 028 22 36.5			
KK284	S 15 09 19.0	E 028 21 03.7			
OKSIX	S 14 06 12.0	E 029 24 30.0			
RETAR	S 16 37 46.8	E 028 28 18.0			

**ROUTING**

NAME	TEXT
AVEKU 1B	From AVEKU track 190° to VLS07, track 201° to KK284, track 174° to KK283, track 084° to APREG. MEL/MEA: AVEKU AT or ABOVE FL120, KK283 AT or ABOVE FL120, APREG AT or ABOVE 6500'.
EGPAK 1B	From EGPAK track 149° to AVEKU, track 190° to VLS07, track 201° to KK284, track 174° to KK283, track 084° to APREG. MEL/MEA: EGPAK AT or ABOVE FL120, KK283 AT or ABOVE FL120, APREG AT or ABOVE 6500'.
EKBIT 1B	From EKBIT track 081° to APKOX, track 084° to KK283, track 084° to APREG. MEL/MEA: EKBIT AT or ABOVE FL120, KK283 AT or ABOVE FL120, APREG AT or ABOVE 6500'.
IBNOP 1B	From IBNOP track 241° to ATUPO. MEL/MEA: IBNOP AT or ABOVE FL075, ATUPO AT or ABOVE 6500'.
OKSIX 1B	From OKSIX track 240° to VLS07, track 201° to KK284, track 174° to KK283, track 084° to APREG. MEL/MEA: OKSIX AT or ABOVE FL245, KK283 AT or ABOVE FL120, APREG AT or ABOVE 6500'.
RETAR 1B	From RETAR track 021° to AXOGA. MEL/MEA: RETAR AT or ABOVE FL075, AXOGA BETWEEN FL115 and 6500'.
TIMAX 1B	From TIMAX track 241° to ATUPO. MEL/MEA: TIMAX AT or ABOVE FL130, ATUPO AT or ABOVE 6500'.
UDGAS 1B	From UDGAS track 157° to APKOX, track 084° to KK283, track 084° to APREG. MEL/MEA: UDGAS AT or ABOVE FL120, KK283 AT or ABOVE FL120, APREG AT or ABOVE 6500'.
UMVUL 1B	From UMVUL track 357° to AXOGA. MEL/MEA: UMVUL AT or ABOVE FL205, AXOGA BETWEEN FL115 and 6500'.

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