

## AD 2 AERODROMES

## RJOK AD 2.1 AERODROME LOCATION INDICATOR AND NAME

## RJOK - KOCHI

## RJOK AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	333246N / 1334010E 266° / 560m FM TWR
2	Direction and distance from (city)	7NM E from Kochi city
3	Elevation/ Reference temperature	29ft / 31°C (2004-2008)
4	Geoid undulation at AD ELEV PSN	120ft
5	MAG VAR/ Annual change	7°W (2006) / 1.0°W
6	AD Administration, address, telephone, telefax, telex, AFS, e-mail and/or Web-site addresses	Civil Aviation Bureau, Kochi Airport Office Monobe, Nankoku - shi, Kochi Pref. TEL: 088(863)2620, FAX: 088(863)2956 AFS: RJOKYFYX AND RJOKZPZX
7	Types of traffic permitted (IFR/VFR)	IFR/VFR
8	Remarks	Nil

## RJOK AD 2.3 OPERATIONAL HOURS

1	AD Administration	2200 - 1200
2	Customs and immigration	On request Customs: 088-832-6131 Immigration: 088-871-7030
3	Health and sanitation	On request Quarantine(human): 0877-46-4279 Quarantine(animal): 087-879-4654 Quarantine(plant): 088-832-3690
4	AIS Briefing Office	2200 - 1200
5	ATS Reporting Office(ARO)	Nil
6	MET Briefing Office	H24 (KANSAI)
7	ATS	2200 - 1200
8	Fuelling	2200 - 1200
9	Handling	2200 - 1200
10	Security	2200 - 1200
11	De-icing	Nil
12	Remarks	Nil

**RJOK AD 2.4 HANDLING SERVICES AND FACILITIES**

1	Cargo-handling facilities	AVBL up to B777-200 ACFT
2	Fuel/ oil types	JET A-1, AVGAS 100
3	Fuelling facilities/ capacity	Fuel Truck Refueling
4	De-icing facilities	Nil
5	Hangar space for visiting aircraft	Nil
6	Repair facilities for visiting aircraft	Nil
7	Remarks	Nil

**RJOK AD 2.5 PASSENGER FACILITIES**

1	Hotels	In Nankoku City
2	Restaurants	At airport
3	Transportation	Buses and Taxi
4	Medical facilities	In Nankoku City
5	Bank and Post Office	ATM in airport
6	Tourist Office	At airport
7	Remarks	Nil

**RJOK AD 2.6 RESCUE AND FIRE FIGHTING SERVICES**

1	AD category for fire fighting	CAT 9
2	Rescue equipment	Chemical fire fighting truck x 3, Water-supply truck x 1 Lighting power supply truck x 1 Emergency medical equipment conveyance truck x 1
3	Capability for removal of disabled aircraft	Nil
4	Remarks	Nil

**RJOK AD 2.7 SEASONAL AVAILABILITY-CLEARING**

1	Types of clearing equipment	Motor grader x 7
2	Clearance priorities	1) RWY, 2) TWY T1 T6 A1-A5, 3) TWY T2-T5 and APRON
3	Remarks	Snow removal will be commenced when the RWY and TWY are covered with snow its depth 5cm or more

**RJOK AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA**

1	Apron surface and strength	Surface : Concrete, Strength : PCN 52/R/B/X/T
2	Taxiway width, surface and strength	T2 THRU T5 Width : 34m, Surface : Asphalt-concrete, Strength : PCN 42/F/A/X/T T1, T6 Width : 28.5m, Surface : Asphalt-concrete, Strength : PCN 42/F/A/X/T A1 THRU A5 Width : 23m, Surface : Asphalt-concrete, Strength : PCN 42/F/A/X/T
3	ACL and elevation	Not available
4	VOR checkpoints	Not available
5	INS checkpoints	Spot NR 0: 333253.60N/1334019.95E 1: 333251.95N/1334021.08E 2: 333251.32N/1334023.49E 3: 333250.05N/1334025.25E 4: 333248.79N/1334027.02E 5: 333247.49N/1334028.75E
6	Remarks	Nil

**RJOK AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS**

1	Use of aircraft stand ID signs, TWY guide lines and Visual docking/ parking guidance system of aircraft stands	Aircraft stand ID signs: Spot NR2-4
2	RWY and TWY markings and LGT	RWY 14/32: (Marking): RWY designation, RWY CL, RWY THR, RWY middle point, Aiming point, TDZ, RWY side stripe (LGT): RCLL, REDL, RENL, RTHL, RTZL(RWY32), WBAR(RWY32) TWY: All TWY (Marking): TWY CL, RWY HLDG PSN, TWY side stripe (LGT): TWY edge LGT, TWY CL LGT, Taxiing guidance sign(T1-T6), RWY guard LGT(T1-T6)
3	Stop bars	Nil
4	Remarks	(Marking): Overrun area (LGT): Apron flood LGT

## RJOK AD 2.10 AERODROME OBSTACLES

In Area2 See Obstacle data

Other obstacles

OBST ID/ designation	Obstacle type	Coordinates	Elevation	Markings/ LGT	Remarks
RJOK1	Mountain	333401.1N/1333838.6E	182ft	-/LIM	Under APCH SFC
RJOK2	Pole	333328.3N/1333919E	62ft	-/LIL	Under APCH SFC
RJOK3	Pole	333318.3N/1333923E	53ft	-/LIL	Under APCH SFC
RJOK4	Dike	333210.1N/1334059.6E	38ft	-/LIL	Under APCH SFC
RJOK5	Tower	333257N/1333936E	104ft	-/LIL	Under transitional SFC

In Area3 To be developed

## RJOK AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET Office	KANSAI
2	Hours of service MET Office outside hours	H24 (KANSAI)
3	Office responsible for TAF preparation Periods of validity	KANSAI 30 Hours
4	Trend forecast Interval of issuance	Nil
5	Briefing/ consultation provided	Briefing is available upon inquiry at KANSAI
6	Flight documentation Language(s) used	C En
7	Charts and other information available for briefing or consultation	S <sub>6</sub> , U <sub>85</sub> , U <sub>7</sub> , U <sub>5</sub> , U <sub>3</sub> , U <sub>25</sub> , U <sub>2</sub> /T <sub>r</sub> , P <sub>s</sub> , P <sub>5</sub> , P <sub>3</sub> , P <sub>25</sub> , P <sub>SWE</sub> , P <sub>SWF</sub> , P <sub>SWG</sub> , P <sub>SWI</sub> , P <sub>SWM</sub> , P <sub>SW</sub> (domestic), E, C, W <sub>E</sub> , W <sub>F</sub> , W <sub>G</sub> , W <sub>I</sub> , W, N
8	Supplementary equipment available for providing information	Nil
9	ATS units provided with information	TWR, APP, ATIS
10	Additional information (limitation of service, etc.)	Nil

## RJOK AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	TRUE BRG	Dimensions of RWY(M)	Strength(PCN) and surface of RWY	THR coordinates THR geoid undulation	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
14	130.51°	2500 × 45	PCN 80/F/B/X/T Asphalt Concrete	333312.04N 1333932.98E 120.4ft	THR ELEV: 42ft
32	310.51°	2500 × 45	PCN 80/F/B/X/T Asphalt Concrete	333219.33N 1334046.67E 120.3ft	THR ELEV: 17.8ft TDZ ELEV: 23ft

Slope of RWY	Strip Dimensions (M)	RESA (Overrun) Dimensions(M)	Remarks
7	10	11	14
See below figure	2620 × 300	40 × (MNM:242 MAX:300)*	RWY Grooving 2500x30m
	2620 × 300	180 × (MNM:127 MAX:300)* *For detail, ask airport administrator	

The profile view shows the elevation of the runway surface from 0m to 2500m. Runway 14 starts at 42FT (0m) and Runway 32 starts at 18FT (2400m). The profile is divided into segments with specific slope percentages: -0.55% (0-275m), -0.69% (275-511.5m), -0.10% (511.5-1240m), -0.06% (1240-1540m), -0.15% (1540-1940m), -0.34% (1940-2000m), and -0.03% (2000-2500m). Elevation points are marked at 37FT (275m), 32FT (511.5m), 29FT (1240m), 23FT (1540m), 21FT (1940m), 20FT (2000m), and 18FT (2400m).

## RJOK AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks
1	2	3	4	5	6
14	2500	2500	2500	2500	Nil
32	2500	2500	2500	2500	Nil

## RJOK AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	APCH LGT type LEN INTST	RTHL Color WBAR	PAPI (VASIS) Angle DIST FM THR MEHT	RTZL LEN	RCLL LEN Spacing Color INTST	REDL LEN Spacing Color INTST	RENL Color WBAR	STWL LEN Color
1	2	3	4	5	6	7	8	9
14	SALS 420m (*1) LIH	Green -	PAPI 3.0°/Left 583.5m 84ft	-	2500m 30m Coded color (White/Red) LIH	2500m 60m Coded color (White/Yellow) LIH	Red	Nil (*2)
32	PALS (CAT I) 420m LIH	Green Green	PAPI 3.0°/Left 404.4m 66ft	900m	2500m 30m Coded color (White/Red) LIH	2500m 60m Coded color (White/Yellow) LIH	Red	Nil (*2)
Remarks								
10								
SALS with APCH LGT beacon (589.358m and 952.287m FM RWY 14 THR)(*1) Overrun area edge LGT(LEN:60m Color:Red) (*2) CGL for RWY 14								

## RJOK AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN/IBN location, characteristics and hours of operation	ABN: 333255N/1334030E, White/Green EV4.3sec, HO
2	LDI location and LGT Anemometer location and LGT	LDI:Nil Anemometer : 430m FM RWY 14 THR, LGTD 430m FM RWY 32 THR, LGTD
3	TWY edge and centerline lighting	TWY edge LGT: Blue TWY CL LGT: ALTN Green/Yellow FM RWY leaving Report point, other Green
4	Secondary power supply/ switch-over time	Within 1 sec : REDL, RENL, RTHL, WBAR, RCLL, Overrun area edge LGT Within 15 sec : Other LGT
5	Remarks	WDI LGT

## RJOK AD 2.16 HELICOPTER LANDING AREA

Nil
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## RJOK AD 2.17 ATS AIRSPACE

Designation and lateral limits		Vertical limits (ft)	Airspace classification	ATS unit call sign Language	Remarks
1		2	3	4	6
Kochi CTR	Area within a radius of 5nm of KOCHI ARP (33° 33'N/133° 40'E).	3000 or below	D	Kochi TOWER En	
Kansai ACA	See RJBB attached chart		E	Kansai APP Kansai DEP Kansai RADAR En	

## RJOK AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of operation	Remarks
1	2	3	4	5
APP/ASR	Kansai Approach / Kansai Radar	125.0 MHz 124.8 MHz  121.5 MHz(E) 243.0 MHz(E)	2200 - 1200	APP service provided by KANSAI APP.
DEP	Kansai Departure	124.8 MHz(1) 125.0 MHz  121.5 MHz(E) 243.0 MHz(E)	2200 - 1200	(1)Primary
TWR	Kochi Tower	118.75 MHz(1) 126.2 MHz  121.5 MHz(E) 243.0 MHz(E)	2200 - 1200	(1)Primary
ATIS	Kochi Airport	126.45MHz	2200 - 1200	

## RJOK AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid (VOR declination)	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
VOR (7°W / 2008)	KRE	113.7MHz	H24	333230.42N/ 1334048.57E		VOR/DME Unusable: 010°-040° beyond 30nm BLW 8,000ft.
DME	KRE	1171MHz (CH-84X)	H24	333230.42N/ 1334048.57E	16.3m (54ft)	040°-060° beyond 30nm BLW 9,000ft. 340°-010° beyond 30nm BLW 9,000ft.
ILS-LOC 32	IKR	110.9MHz	2200 -1200	333316.90N/ 1333926.24E		LOC: 230m (755ft) away FM RWY 14 THR, BRG (MAG) 318°. Unusable : beyond 25° NE Side of course due to Terrain.
ILS-GP 32	-	330.8MHz	2200-1200	333222.28N/ 1334035.09E		GP: 287m (942ft) inside FM RWY 32 THR, 125m (410ft) SW of RCL. Angle 3.0°, HGT of ILS REF datum 15.5m(51ft).
ILS-DME 32	IKR	1007MHz	2200-1200	333222.10N/ 1334034.73E	9.8m (32ft)	DME: 290m (951ft) inside FM RWY 32 THR, 135m (443ft) SW of RCL.
MSAS		1575.42MHz	H24			Transmitting antennas are satellite based



UNUSABLE : BEYOND 25DEG NORTH EAST(150Hz) SIDE OF COURSE DUE TO TERRAIN.



**RJOK AD 2.20 LOCAL TRAFFIC REGULATIONS**

## 1. Airport regulations

Aircraft operations other than scheduled flights or in an emergency.  
Prior permission required for transient aircraft.  
Call : 088-863-2620(OPS)

## 2. Taxiing to and from stands

Nil

## 3. Parking area for small aircraft(General aviation)

Nil

## 4. Parking area for helicopters

Nil

## 5. Apron - taxiing during winter conditions

Nil

## 6. Taxiing - limitations

Nil

## 7. School and training flights - technical test flights - use of runways

Nil

## 8. Helicopter traffic - limitation

Nil

## 9. Removal of disabled aircraft from runways

Nil

**RJOK AD 2.21 NOISE ABATEMENT PROCEDURES**

## 1. 騒音軽減運航方式

すべてのジェット機に対して、空港周辺における航空機騒音軽減のため、運航の安全に支障のない範囲で、以下の方式が適用される。

ただし、これらの方式によることができない航空機は実効的にこれらと同等と認められる代替方式を実施するものとする。

- (1) 離陸について（滑走路 32）  
急上昇方式
- (2) 着陸について（滑走路 14）  
ディレイド・フラップ進入方式及び  
低フラップ角着陸方式
- (3) リバース・スラストについて  
なし

## 2. 優先滑走路方式

なし

## 3. 優先飛行経路

なし

## 1. Noise Abatement Operating Procedures

For all jet aircraft, in order to reduce aircraft noise in the vicinity of airport, the following procedures shall be applied unless compliance of the procedures adversely affects the safety of aircraft operations.

In case that the aircraft is unable to take these procedures, pilots should execute alternative procedures which are considered to be practically equivalent.

- (1) For take-off from RWY32  
Steepest Climb Procedure
- (2) For landing to RWY14  
Delayed Flap Approach Procedure and  
Reduced Flap Setting Procedure
- (3) Reverse Thrust  
Nil

## 2. Preferential Runways Procedures

Nil

## 3. Noise Preferential Routes

Nil

**RJOK AD 2.22 FLIGHT PROCEDURES****1. TAKE OFF MINIMA**

	RWY	ACFT CAT	REDL & RCLL		REDL or RCLL or RCL Marking		NIL (DAYTIME ONLY)	
			CEIL-RVR	CEIL-VIS	CEIL-RVR	CEIL-VIS	RVR-VIS	CEIL-VIS
Multi-Engine ACFT with TKOF ALTN AP FILED	14	A,B,C,D	-	200'-800m	-	200'-800m	-	200'-800m
	32	A,B,C,D	0'-400m	0'-400m	0'-400m	0'-400m	-	0'-500m
OTHER	14	A,B,C,D	AVBL LDG MINIMA					
	32	A,B,C,D						

**2. Lost communication procedures for arrival aircraft under radar navigational guidance**

If radio communications with Kansai Approach/Radar are lost for 1 minute, squawk Mode A/3 Code 7600 and:

1. Contact Kochi Tower.
2. If unable, proceed in accordance with Visual Flight Rules.
3. If unable,
  - A) When assigned altitude at or above 5,000 feet, proceed to KRE VOR/DME maintaining last assigned altitude and execute instrument approach.
  - B) When assigned altitude below 5,000 feet,
    - a) If established on a segment of the Instrument Approach Procedure, execute that Instrument Approach.
    - b) If not yet established on a segment of the Instrument Approach Procedure, climb and maintain 5,000 feet and proceed to KRE VOR/DME and execute instrument approach.

NOTE: Procedures other than above will be issued when situation required.

**RJOK AD 2.23 ADDITIONAL INFORMATION**

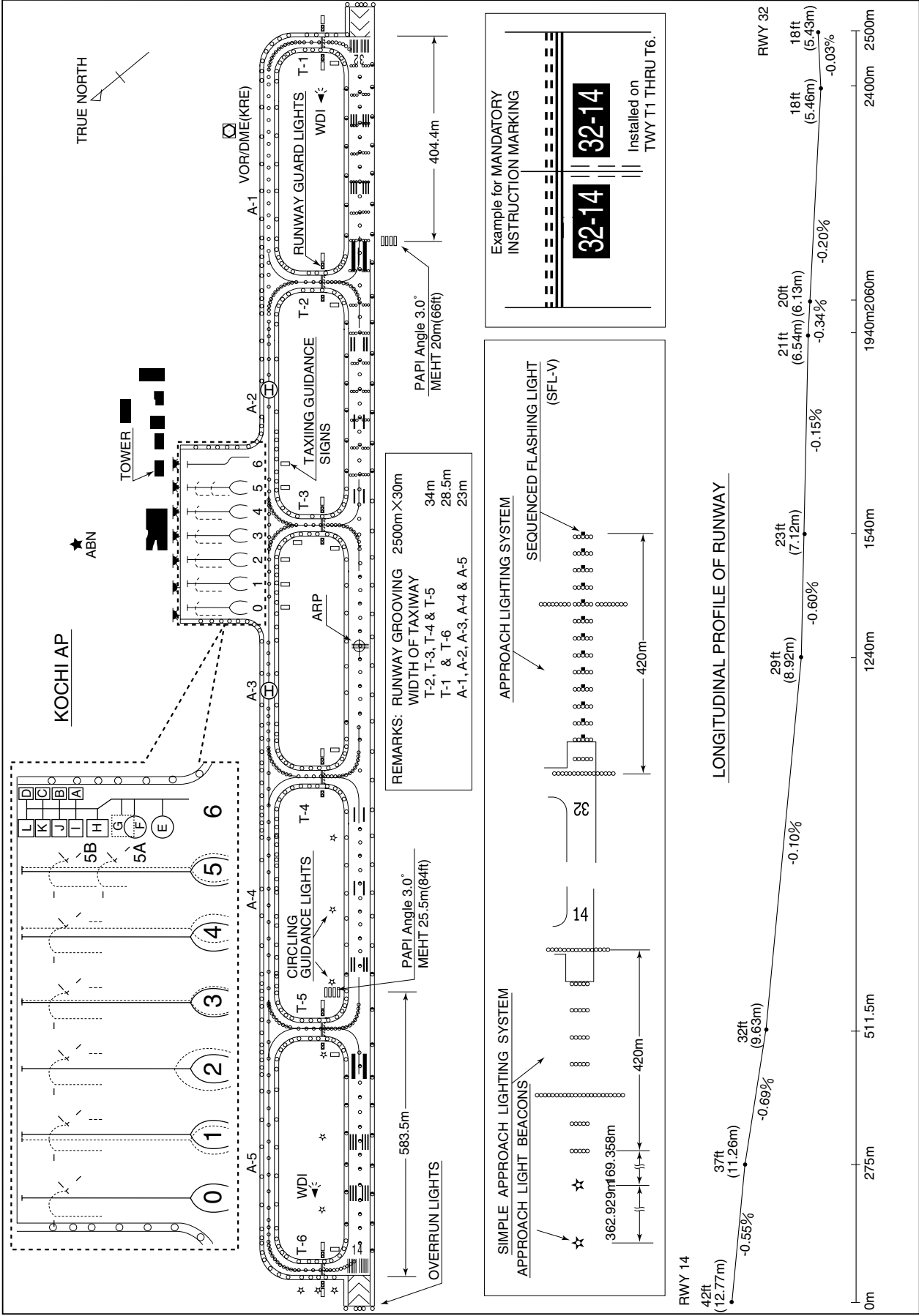
Nil

**RJOK AD 2.24 CHARTS RELATED TO AN AERODROME**

Figure-01 Aerodrome/Heliport Chart  
 Figure-07 Standard Departure Chart-Instrument (SHIMIZU)  
 Figure-07 Standard Departure Chart-Instrument (KOCHI REVERSAL)  
 Figure-07 Standard Departure Chart-Instrument (URADO REVERSAL)  
 Figure-07 Standard Departure Chart-Instrument (KARIN-RNAV)  
 Figure-07 Standard Departure Chart-Instrument (KAIFU-RNAV)  
 Figure-07 Standard Departure Chart-Instrument (MUROT-RNAV)  
 Figure-07 Standard Departure Chart-Instrument (OMOGO-RNAV)  
 Figure-09 Standard Arrival Chart-Instrument (YOSAKOI NORTH-RNAV)  
 Figure-09 Standard Arrival Chart-Instrument (YOSAKOI EAST-RNAV)  
 Figure-09 Standard Arrival Chart-Instrument (YOSAKOI SOUTH-RNAV)  
 Figure-09 Standard Arrival Chart-Instrument (YOSAKOI WEST-RNAV)  
 Figure-10 Instrument Approach Chart (ILS Z or LOC Z RWY32)  
 Figure-10 Instrument Approach Chart (ILS Y or LOC Y RWY32)  
 Figure-10 Instrument Approach Chart (VOR RWY32)  
 Figure-10 Instrument Approach Chart (RNAV(RNP) Z RWY14)  
 Figure-10 Instrument Approach Chart (RNAV(RNP) Y RWY14)  
 Figure-13 Other Chart (Visual REP)  
 Figure-13 Other Chart (LDG CHART)  
 Figure-13 Other Chart (MVA CHART)

RJOK / KOCHI

AD CHART



## STANDARD DEPARTURE CHART - INSTRUMENT

RJOK / KOCHI

SID

**SHIMIZU SIX DEPARTURE**

RWY 14 : Climb RWY HDG to 500FT, turn right HDG 268°...

RWY 32 : Climb RWY HDG to 800FT, turn right...

...to intercept and proceed via KRE R223/SUC R043 to SUC VORTAC.

Note RWY32 : 6.0% climb gradient required up to 2500FT.

OBST ALT 2165FT located at 6.6NM 358° FM end of RWY32.

**SHIMIZU SIX DEPARTURE**

STANDARD DEPARTURE CHART - INSTRUMENT

RJOK / KOCHI

SID

KOCHI REVERSAL FIVE DEPARTURE

RWY 14 : Climb RWY HDG to 500FT, turn right...

RWY 32 : Climb RWY HDG to 800FT, turn right HDG 205°...

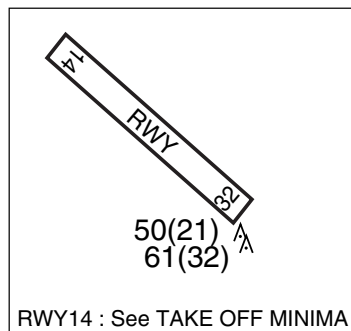
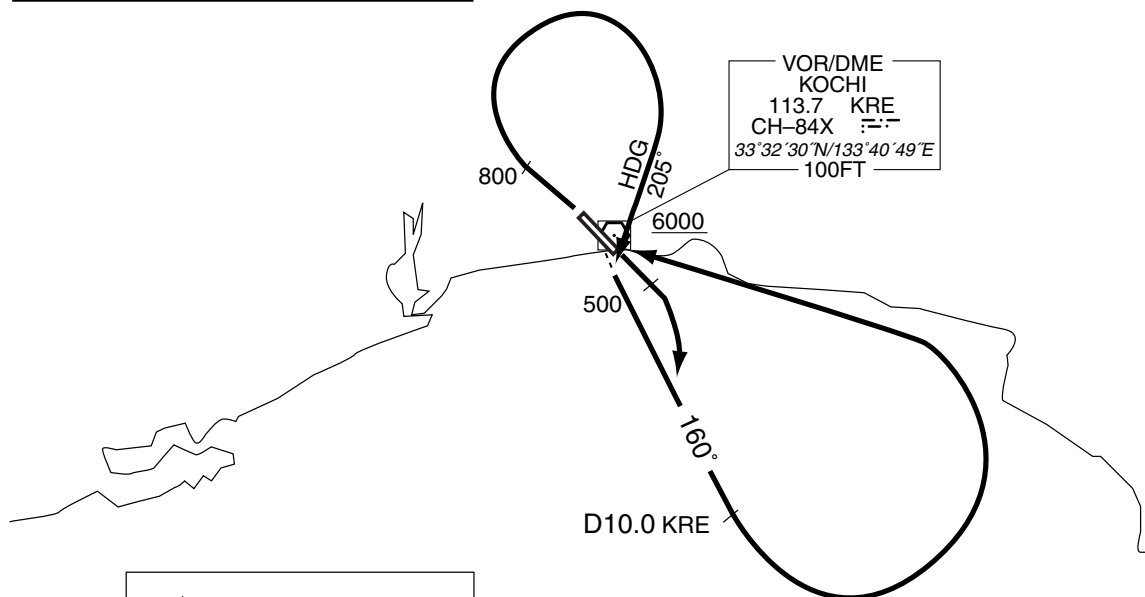
...to intercept and proceed via KRE R160 to KRE 10.0DME, then turn left  
proceed to KRE VOR/DME.

Cross KRE VOR/DME at or above 6000FT.

Note RWY32 : 6.0% climb gradient required up to 2500FT.

OBST ALT 2165FT located at 6.6NM 358° FM end of RWY32.

KOCHI REVERSAL FIVE DEPARTURE



## STANDARD DEPARTURE CHART - INSTRUMENT

RJOK / KOCHI

SID

URADO REVERSAL THREE DEPARTURE

RWY 14 : Climb RWY HDG to 500FT, turn right HDG 255°...

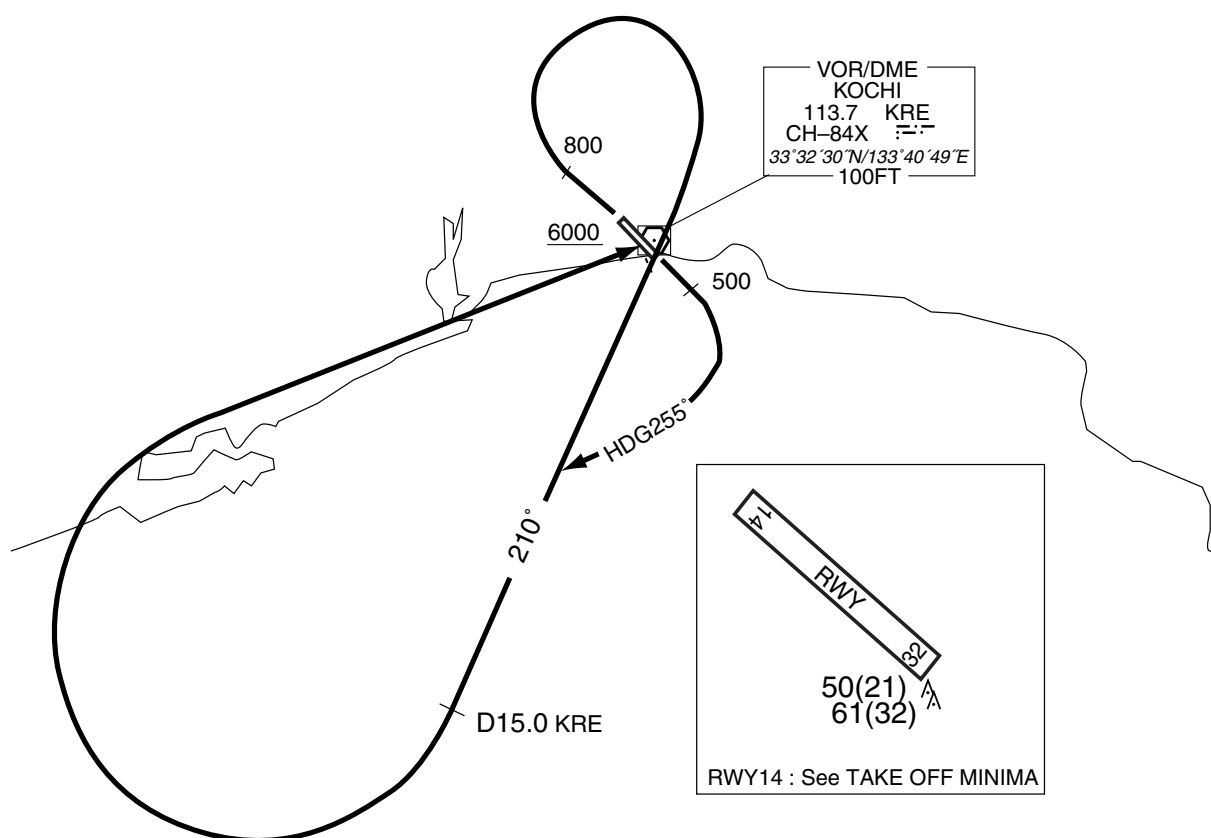
RWY 32 : Climb RWY HDG to 800FT, turn right...

...to intercept and proceed via KRE R210 to KRE 15.0DME, then turn right  
proceed to KRE VOR/DME.

Cross KRE VOR/DME at or above 6000FT.

Note RWY32 : 6.0% climb gradient required up to 2500FT.

OBST ALT 2165FT located at 6.6NM 358° FM end of RWY32.

URADO REVERSAL THREE DEPARTURE

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

## KARIN ONE RNAV DEPARTURE

## RNAV 1

Note 1) DME/DME/IRU or GNSS required.

※The aircraft equipped with only DME/DME/IRU must be able to update its position without delay at the starting point of take-off roll.

2) RADAR service required.

Critical DME

RWY14 : KRE 3.0NM fm DER - 7NM to KARIN  
SUC 3.0NM fm DER - 10NM to KARIN  
RWY32 : KRE 9NM to OK32C - 10NM to KARIN  
SUC 9NM to OK32C - 4NM to OK32C

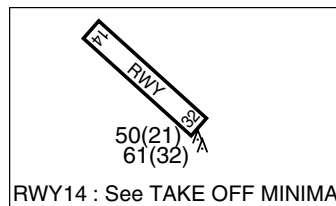
DME GAP

RWY14 : DER - 3.0NM fm DER  
RWY32 : DER - 9NM fm OK32C

Inappropriate NavAids

See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

VAR 7° W(2009)



DESIGNATION	COORDINATES
OK14A	33 24 50.3N 133 43 34.2E
OK14B	33 24 02.9N 133 50 40.3E
OK32A	33 36 15.7N 133 44 17.5E
OK32C	33 28 04.1N 133 55 42.6E
KARIN	33 40 24.4N 134 11 14.9E

Note RWY32: 6.0% climb gradient required up to 2300FT.

RWY14 : Climb on HDG137° at or above 500FT, turn right direct to OK14A, to OK14B, to KARIN at or above 8000FT.

RWY32 : Climb on HDG317° at or above 600FT, turn right direct to OK32A, to OK32C, to KARIN at or above 8000FT.

Note RWY32: 6.0% climb gradient required up to 2300FT.

OBST ALT 1970FT located at 6.13NM 004° FM end of RWY32.

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

KARIN ONE RNAV DEPARTURE

## RWY14

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	137° (130.6°)	—	+500	—	—	RNAV1
DF	OK14A	—	—	—	R	—	—	—	RNAV1
TF	OK14B	—	6.0	104° (097.5°)	—	—	—	—	RNAV1
TF	KARIN	—	23.7	053° (046.3°)	—	+8000	—	—	RNAV1

## RWY32

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	317° (310.6°)	—	+600	—	—	RNAV1
DF	OK32A	—	—	—	R	—	—	—	RNAV1
TF	OK32C	—	12.6	138° (130.7°)	—	—	—	—	RNAV1
TF	KARIN	—	17.9	053° (046.3°)	—	+8000	—	—	RNAV1



## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

## KAIFU ONE RNAV DEPARTURE

## RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.

※The aircraft equipped with only DME/DME/IRU must be able to update its position without delay at the starting point of take-off roll.

2 ) RADAR service required.

Critical DME

RWY14 : KRE 3.0NM fm DER - 23NM to KAIFU  
SUC 3.0NM fm DER - 32NM to KAIFU  
RWY32 : KRE 9NM to OK32C - 28NM to KAIFU  
SUC 9NM to OK32C - 4NM to OK32C

DME GAP

RWY14 : DER - 3.0NM fm DER  
RWY32 : DER - 9NM to OK32C

Inappropriate NavAids

See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

VAR 7° W(2009)



DESIGNATION	COORDINATES
OK14A	33 24 50.3N 133 43 34.2E
OK14B	33 24 02.9N 133 50 40.3E
OK32A	33 36 15.7N 133 44 17.5E
OK32C	33 28 04.1N 133 55 42.6E
KAIFU	33 36 10.0N 134 32 31.2E

Note RWY32: 6.0% climb gradient required up to 2300FT.

RWY14 : Climb on HDG137° at or above 500FT, turn right direct to OK14A, to OK14B, to KAIFU.

RWY32 : Climb on HDG317° at or above 600FT, turn right direct to OK32A, to OK32C, to KAIFU.

Note RWY32: 6.0% climb gradient required up to 2300FT.

OBST ALT 1970FT located at 6.13NM 004° FM end of RWY32.

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

KAIFU ONE RNAV DEPARTURE

## RWY14

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	137° (130.6°)	—	+500	—	—	RNAV1
DF	OK14A	—	—	—	R	—	—	—	RNAV1
TF	OK14B	—	6.0	104° (097.5°)	—	—	—	—	RNAV1
TF	KAIFU	—	37.0	077° (070.7°)	—	—	—	—	RNAV1

## RWY32

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	317° (310.6°)	—	+600	—	—	RNAV1
DF	OK32A	—	—	—	R	—	—	—	RNAV1
TF	OK32C	—	12.6	138° (130.7°)	—	—	—	—	RNAV1
TF	KAIFU	—	31.8	082° (075.0°)	—	—	—	—	RNAV1

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID and TRANSITION

MUROT ONE RNAV DEPARTURE		RNAV 1
<p>Note 1 ) DME/DME/IRU or GNSS required.</p> <p>※The aircraft equipped with only DME/DME/IRU must be able to update its position without delay at the starting point of take-off roll.</p> <p>2 ) RADAR service required.</p>		
Critical DME	-	
DME GAP	RWY14 : DER - 3.0NM fm DER RWY32 : DER - 18.0NM to OK32D	
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1	

VAR 7° W(2009)

VOR/DME  
KOCHI  
113.7 KRE  
CH-84X  
33°32'30"N/133°40'49"E  
100FT

OK32A  
N33-36-15.7  
E133-44-17.5

(130.7°T)  
136°  
20.9

600

137°

500

OK14A  
N33-24-50.3  
E133-43-34.2

OK14A-MUROT  
(097.6°T)  
104°  
30.9

OK32D  
N33-22-38.0  
E134-03-14.9

(For RWY32 Only)

(097.7°T)  
105°  
14.3

MUROT  
N33-20-41.6  
E134-20-10.7

(093.3°T)  
100°  
19.0

MIYAT  
N33-19-34.3  
E134-42-50.9

(082.0°T)  
089°  
12.3

MERID  
N33-21-15.9  
E134-57-28.1

(082.2°T)  
089°  
42.3

KUSHIMOTO  
(KEC)  
N33-26-51.9  
E135-47-40.2

MUROT ONE RNAV DEPARTURE

RWY

32

50(21)  
61(32)

RWY14 : See TAKE OFF MINIMA

DESIGNATION	COORDINATES
OK14A	33 24 50.3N 133 43 34.2E
OK32A	33 36 15.7N 133 44 17.5E
OK32D	33 22 38.0N 134 03 14.9E
MUROT	33 20 41.6N 134 20 10.7E
MIYAT	33 19 34.3N 134 42 50.9E
MERID	33 21 15.9N 134 57 28.1E
KUSHIMOTO(KEC)	33 26 51.9N 135 47 40.2E

Note RWY32: 6.0% climb gradient required up to 2300FT.

MUROT ONE RNAV DEPARTURE

RWY14 : Climb on HDG137° at or above 500FT, turn right direct to OK14A, to MUROT.

RWY32 : Climb on HDG317° at or above 600FT, turn right direct to OK32A, to OK32D, to MUROT.

KUSHIMOTO TRANSITION

From MUROT to MIYAT, to MERID, to KUSHIMOTO(KEC).

Note RWY32: 6.0% climb gradient required up to 2300FT.

OBST ALT 1970FT located at 6.13NM 004° FM end of RWY32.

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID and TRANSITION

MUROT ONE RNAV DEPARTURE

## RWY14

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	137° (130.6°)	—	+500	—	—	RNAV1
DF	OK14A	—	—	—	R	—	—	—	RNAV1
TF	MUROT	—	30.9	104° (097.6°)	—	—	—	—	RNAV1

## RWY32

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
VA	—	—	—	317° (310.6°)	—	+600	—	—	RNAV1
DF	OK32A	—	—	—	R	—	—	—	RNAV1
TF	OK32D	—	20.9	138° (130.7°)	—	—	—	—	RNAV1
TF	MUROT	—	14.3	105° (097.7°)	—	—	—	—	RNAV1

KUSHIMOTO TRANSITION

Rcmd. Path Terminator	Fix ID (Waypoint Name)	Fly Over	Distance (NM)	MAG Track (TRUE Track)	Turn Direction	Altitude (FT)	Speed Limit (KIAS)	Vertical Angle	Navigation Performance
IF	MUROT	—	—	—	—	—	—	—	RNAV1
TF	MIYAT	—	19.0	100° (093.3°)	—	—	—	—	RNAV1
TF	MERID	—	12.3	089° (082.0°)	—	—	—	—	RNAV1
TF	KUSHIMOTO (KEC)	—	42.3	089° (082.2°)	—	—	—	—	RNAV1

STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

OMOGO TWO RNAV DEPARTURE

RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.

※The aircraft equipped with only DME/DME/IRU must be able to update its position without delay at the starting point of take-off roll.

2 ) RADAR service required.

Critical DME

RWY14 : KRE 16NM to YUZNO - 7NM to YUZNO  
SUC 16NM to YUZNO - 7NM to YUZNO  
RWY32 : KRE 4NM to OK32B - 25NM to YUZNO  
SUC 4NM to OK32B - 25NM to YUZNO

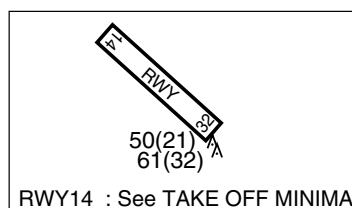
DME GAP

RWY14 : DER - 16NM to YUZNO  
RWY32 : DER - 4NM to OK32B  
25NM to YUZNO - 18NM to YUZNO

Inappropriate NavAids

See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

VAR 7° W(2017)



RWY14 : Climb on HDG138° at or above 500FT, turn right direct to OK14C, to YUZNO, to OMOGO.

RWY32 : Climb on HDG318° at or above 600FT, turn right direct to OK32A, to OK32B, to OK32E, to YUZNO, to OMOGO.

Note RWY32: 6.0% climb gradient required up to 2300FT.

OBST ALT 1970FT located at 6.1NM 004° FM end of RWY32.

## STANDARD DEPARTURE CHART -INSTRUMENT

RJOK / KOCHI

RNAV SID

**OMOGO TWO RNAV DEPARTURE****RWY14**

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	VA	—	—	138 (130.6)	-7.4	—	—	+500	—	—	RNAV1
002	DF	OK14C	—	—	-7.4	—	R	—	—	—	RNAV1
003	TF	YUZNO	—	320 (312.9)	-7.4	18.8	—	—	—	—	RNAV1
004	TF	OMOGO	—	296 (288.5)	-7.4	4.0	—	—	—	—	RNAV1

**RWY32**

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	VA	—	—	318 (310.6)	-7.4	—	—	+600	—	—	RNAV1
002	DF	OK32A	—	—	-7.4	—	R	—	—	—	RNAV1
003	TF	OK32B	—	138 (130.7)	-7.4	7.0	—	—	—	—	RNAV1
004	TF	OK32E	—	230 (222.8)	-7.4	13.3	—	—	—	—	RNAV1
005	TF	YUZNO	—	320 (312.9)	-7.4	25.9	—	—	—	—	RNAV1
006	TF	OMOGO	—	296 (288.5)	-7.4	4.0	—	—	—	—	RNAV1

## STANDARD ARRIVAL CHART -INSTRUMENT

RJOK / KOCHI

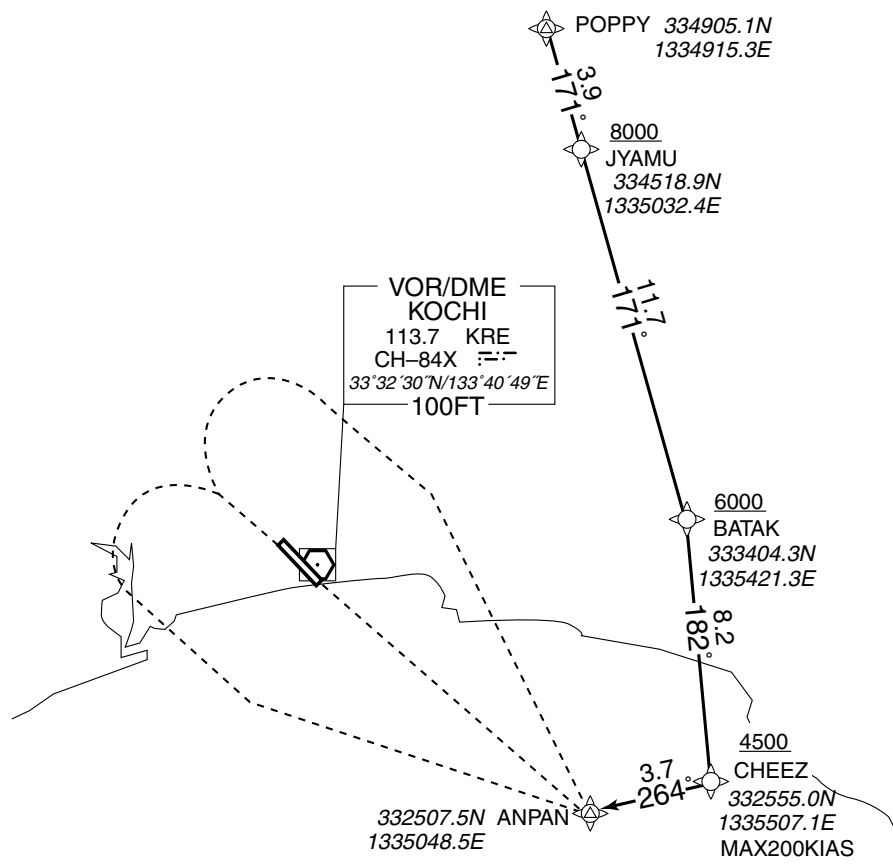
RNAV STAR

## YOSAKOI NORTH ARRIVAL

RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.  
2 ) RADAR service required.

VAR 7° W(2012)



From POPPY, to JYAMU at or above 8000FT, to BATAK at or above 6000FT, to CHEEZ at or above 4500FT, to ANPAN.

Critical DME	GBD	POPPY - 2NM to BATAK
	SUC	7NM to BATAK - ANPAN
	KRE	1NM to BATAK - ANPAN
DME GAP	-	
Inappropriate Nav aids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1	

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course [°M(°T)]	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	POPPY	—	—	-6.9	—	—	—	—	—	RNAV1
002	TF	JYAMU	—	171 (164.2)	-6.9	3.9	—	+8000	—	—	RNAV1
003	TF	BATAK	—	171 (164.2)	-6.9	11.7	—	+6000	—	—	RNAV1
004	TF	CHEEZ	—	182 (175.5)	-6.9	8.2	—	+4500	-200	—	RNAV1
005	TF	ANPAN	—	264 (257.6)	-6.9	3.7	—	—	—	—	RNAV1

## STANDARD ARRIVAL CHART -INSTRUMENT

RJOK / KOCHI

RNAV STAR

## YOSAKOI EAST ARRIVAL

RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.  
2 ) RADAR service required.

VAR 7° W(2012)



From PANCH, to ANPAN.

Critical DME	KRE	PANCH - ANPAN
	SUC	8NM to ANPAN - ANPAN
DME GAP	-	
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1	

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course [°M(°T)]	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	PANCH	—	—	-6.9	—	—	—	—	—	RNAV1
002	TF	ANPAN	—	326 (318.7)	-6.9	18.3	—	—	—	—	RNAV1



STANDARD ARRIVAL CHART -INSTRUMENT

RJOK / KOCHI

RNAV STAR

YOSAKOI SOUTH ARRIVAL

RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.  
2 ) RADAR service required.

VAR 7° W(2012)



From OKITU, to BIRKN, to ANPAN.

Critical DME	IWT	OKITU - 26NM to BIRKN
	SUC	12NM to BIRKN - ANPAN
	KRE	12NM to BIRKN - ANPAN
DME GAP	26NM to BIRKN - 12NM to BIRKN	
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1	

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course [°M(°T)]	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	OKITU	—	—	-6.9	—	—	—	—	—	RNAV1
002	TF	BIRKN	—	064 (057.3)	-6.9	29.6	—	—	-230	—	RNAV1
003	TF	ANPAN	—	047 (040.6)	-6.9	4.5	—	—	—	—	RNAV1

## STANDARD ARRIVAL CHART -INSTRUMENT

RJOK / KOCHI

RNAV STAR

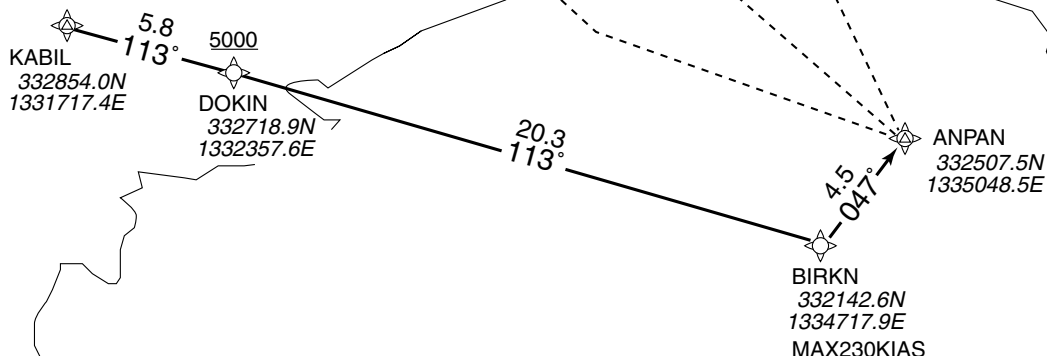
## YOSAKOI WEST ARRIVAL

RNAV 1

Note 1 ) DME/DME/IRU or GNSS required.  
2 ) RADAR service required.

VAR 7° W(2012)

VOR/DME  
KOCHI  
113.7 KRE  
CH-84X  
33°32'30"N/133°40'49"E  
100FT



From KABIL, to DOKIN at or above 5000FT, to BIRKN, to ANPAN.

Critical DME	KRE	1NM to DOKIN - 16NM to BIRKN 7NM to BIRKN - ANPAN
	SUC	1NM to DOKIN - 16NM to BIRKN 7NM to BIRKN - ANPAN
DME GAP	16NM to BIRKN - 7NM to BIRKN	
Inappropriate Nav aids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1	

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course [°M(°T)]	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	KABIL	—	—	-6.9	—	—	—	—	—	RNAV1
002	TF	DOKIN	—	113 (105.9)	-6.9	5.8	—	+5000	—	—	RNAV1
003	TF	BIRKN	—	113 (105.9)	-6.9	20.3	—	—	-230	—	RNAV1
004	TF	ANPAN	—	047 (040.6)	-6.9	4.5	—	—	—	—	RNAV1

## INSTRUMENT APPROACH CHART

RJOK / KOCHI

ILS Z or LOC Z RWY32



## MISSED APPROACH

Climb to 800FT on HDG318°, turn left HDG178° to intercept and proceed via KRE R223 to SUSAK and hold at 3000FT. Contact KANSAI APP.

Timing not authorized for defining the MAPt.

DME to IKR	0.6	1.0	4.6	11.2
NM to THR	0	0.4	0.8	4.4

Missed APCH climb gradient MNM 5.0%

MINIMA THR elev. 18 AD elev. 29

CAT	CAT I		LOC		CIRCLING	
	DA(H)	RVR/CMV	MDA(H)	RVR/CMV	MDA(H)	VIS
A	218 (200)	700	320 (302)	1200	690 (661)	1600
B				1300		
C				1400	760 (731)	2400
D				1600	830 (801)	3200

Circling to EAST side of RWY only.

MINIMA with Missed APCH climb gradient of 2.5% are not established.

CHANGE : VAR

## RJOK / KOCHI

ILS Y or LOC Y RWY32

KANSAI APP	ILS - LOC 110.9 IKR 330.8	KOCHI TOWER	RADAR AVBL
125.0 – 124.8	ILS - GP 330.8 ILS - DME CH-46X	118.75 – 126.2	ATIS 126.45



Climb to 800FT on HDG318°, turn left HDG178° to intercept and proceed via KRE R223 to SUSAK and hold at 3000FT. Contact KANSAI APP.



Timing not authorized for defining the MAPt.

DME to IKR	0.6	1.0	4.6
NM to THR	0	0.4	0.8

Missed APCH climb gradient MNM 5.0%

MINIMA		THR elev. 18		AD elev. 29		
CAT	CAT I		LOC		CIRCLING	
	DA(H)	RVR/ CMV	MDA(H)	RVR/ CMV	MDA(H)	VIS
A	218 (200)	700	320 (302)	1200	690 (661)	1600
B				1300		
C				1400	760 (731)	2400
D				1600	830 (801)	3200

Circling to EAST side of RWY only.  
MINIMA with Missed APCH climb gradient of 2.5% are not established.

CHANGE : VAR

## INSTRUMENT APPROACH CHART

RJOK / KOCHI

VOR RWY32



## MISSED APPROACH

Climb via KRE R324 to 500FT,  
turn left HDG178° to intercept  
and proceed via KRE R223 to  
SUSAK and hold at 3000FT.  
Contact KANSAI APP.

Timing not authorized for defining the MAPt.



Missed APCH climb gradient MNM 4.5%

MINIMA THR elev. 18 AD elev. 29

CAT	MINIMA		CIRCLING	
	MDA(H)	RVR/CMV	MDA(H)	VIS
A	360 (342)	1200	690 (661)	1600
B	400 (382)	1300		
C	430 (412)	1400	760 (731)	2400
D	450 (432)	1600	830 (801)	3200

Circling to EAST side of RWY only.

MINIMA with Missed APCH climb gradient of 2.5% are not established.

## INSTRUMENT APPROACH CHART

RJOK / KOCHI

RNAV(RNP) Z RWY14



## INSTRUMENT APPROACH CHART

RJOK / KOCHI

RNAV(RNP) Z RWY14

RNAV(RNP) Z RWY14Coding Table

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	VPA/ RDH (°/FT)	RNP Value
001	IF	ANPAN	—	—	-6.9	—	—	+4000	—	—	—
002	TF	NOITI	—	343 (335.9)	-6.9	9.7	—	+4000	—	—	1.0
003	TF	IGENO	—	318 (310.7)	-6.9	4.2	—	3500	—	—	1.0
004	TF	OK451	—	318 (310.7)	-6.9	1.8	—	2922	-165	-3.00	0.14 0.30
005	RF Center: OKRF1 r=2.07NM	OK477	—	—	-6.9	6.5	L	856	—	-3.00	0.14 0.30
006	TF	RW14	Y	138 (130.6)	-6.9	2.4	—	92	—	-3.00/50	0.14 0.30
007	TF	ANPAN	—	138 (130.6)	-6.9	12.4	—	4000	—	—	1.0

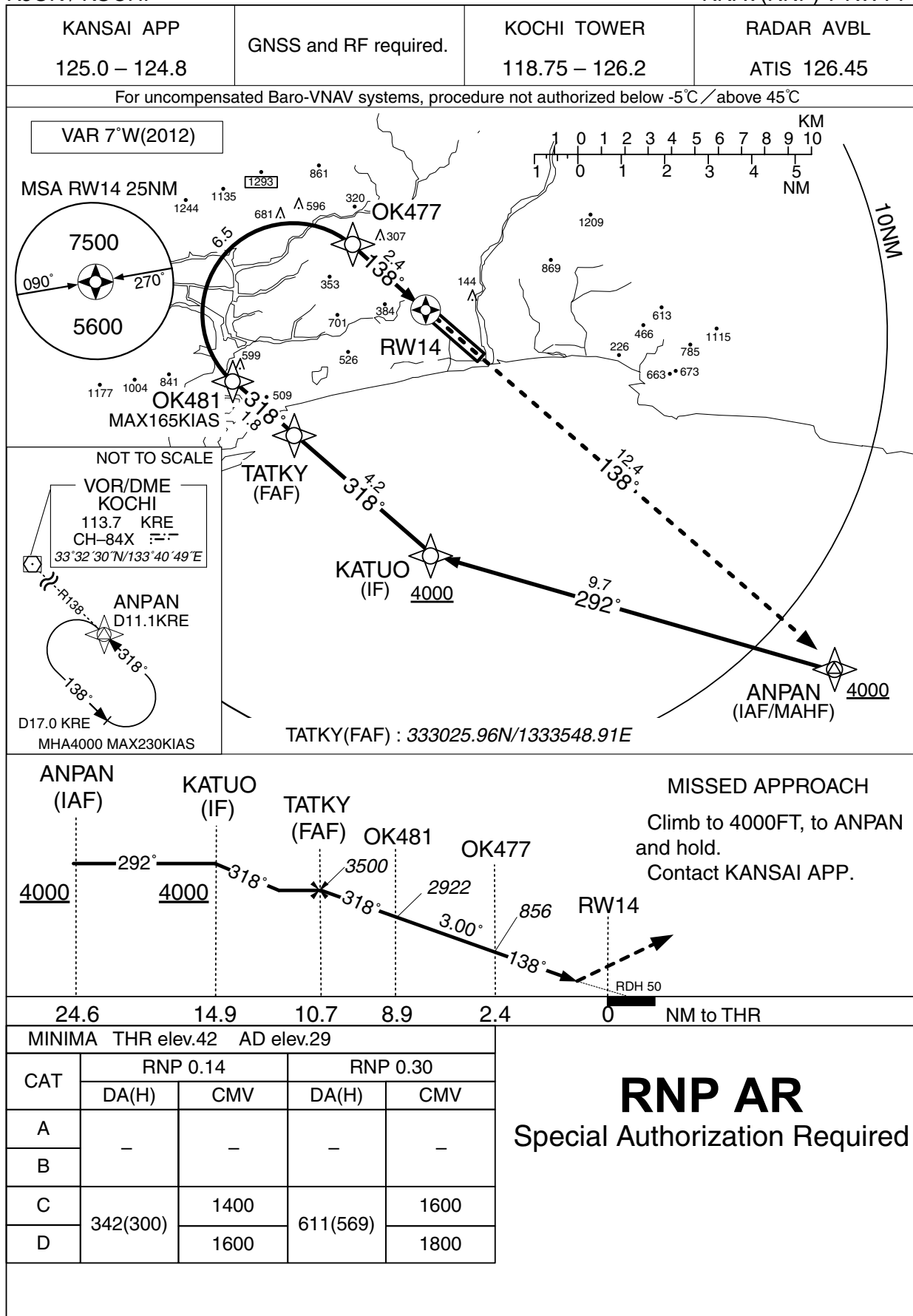
Waypoint Coordinates

Waypoint Identifier	Coordinates	RF Arc Center Identifier	Coordinates
ANPAN	332507.54N/1335048.52E	OKRF1	333620.13N/1333858.11E
NOITI	333400.03N/1334602.07E		
IGENO	333643.39N/1334213.86E		
OK451	333754.48N/1334034.43E		
OK477	333445.76N/1333721.85E		
RW14	333312.04N/1333932.98E		

## INSTRUMENT APPROACH CHART

RJOK / KOCHI

RNAV(RNP) Y RWY14





## INSTRUMENT APPROACH CHART

RJOK / KOCHI

RNAV(RNP) Y RWY14

RNAV(RNP) Y RWY14Coding Table

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	VPA/RDH (°/FT)	RNP Value
001	IF	ANPAN	—	—	-6.9	—	—	+4000	—	—	—
002	TF	KATUO	—	292 (285.5)	-6.9	9.7	—	+4000	—	—	1.0
003	TF	TATKY	—	318 (310.6)	-6.9	4.2	—	3500	—	—	1.0
004	TF	OK481	—	318 (310.6)	-6.9	1.8	—	2922	-165	-3.00	0.14 0.30
005	RF Center: OKRF2 r=2.07NM	OK477	—	—	-6.9	6.5	R	856	—	-3.00	0.14 0.30
006	TF	RW14	Y	138 (130.6)	-6.9	2.4	—	92	—	-3.00/50	0.14 0.30
007	TF	ANPAN	—	138 (130.6)	-6.9	12.4	—	4000	—	—	1.0

Waypoint Coordinates

Waypoint Identifier	Coordinates	RF Arc Center Identifier	Coordinates
ANPAN	332507.54N/1335048.52E	OKRF2	333311.37N/1333545.65E
KATUO	332742.79N/1333937.02E		
TATKY	333025.96N/1333548.91E		
OK481	333136.96N/1333409.51E		
OK477	333445.76N/1333721.85E		
RW14	333312.04N/1333932.98E		

RJOK / KOCHI

Visual REP



Call sign	BRG / DIST from ARP	Remarks
工 科 大 Koukadai	035°/ 5.2NM	高知工科大学 Kochi University of Technology
芸 西 Geisei	113°/ 5.9NM	観光ホテル Hotel
桂 浜 Katsurahama	248°/ 6.0NM	浦戸大橋 Bridge
高 知 市 Kochi city	290°/ 6.5NM	JR高知駅 Station
植 野 Ueno	355°/ 5.0NM	ゴルフ場 Golf course
安 芸 Aki	110°/12.5NM	安芸川河口 River mouth
横 浪 Yokonami	243°/12.9NM	国民宿舎 Hotel



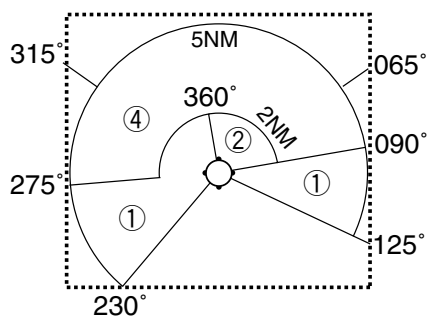
RJOK / KOCHI

Minimum Vectoring Altitude CHART

VAR 7°W (2009)



- ① 2000
- ② 2300
- ③ 2500
- ④ 3000
- ⑤ 3500
- ⑥ 4000
- ⑦ 4500



CENTER : 333245N/1334039E (RADAR SITE)