



# Procedimientos RNP a pistas visuales

Raymundo Hurtado  
06Marzo2022

# SPJR SPHO



**SPJR / CJA**

GEN Armando Revoredo

05 ENE 12 12-1 LP A319-132

**CAJAMARCA, PERU**

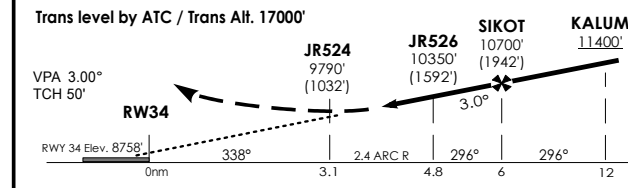
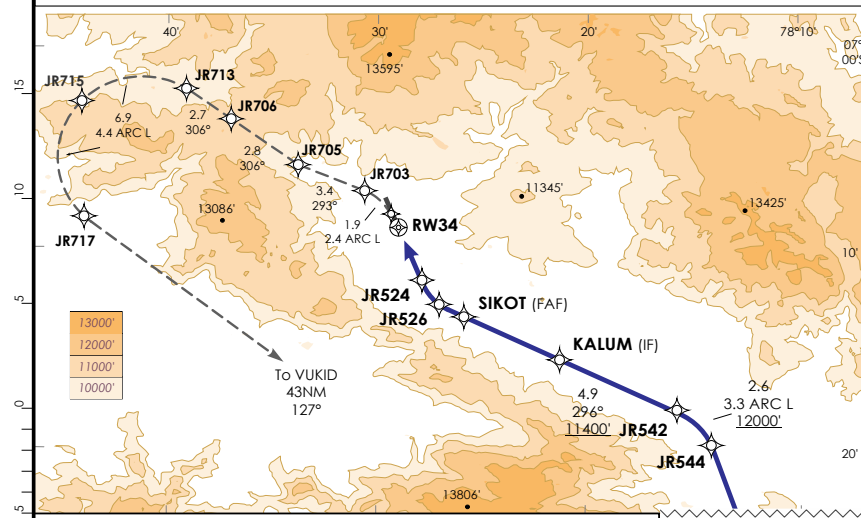
RNAV (RNP) RWY 34

CAJAMARCA Tower <b>120.1</b>				16000'	
RNAV (RNP)	Final Apch Crs	SIKOT (FAF)	RNP 0.3 DA(H)	Apt Elev	8848'
<b>RNV 34</b>	<b>338°</b>	<b>10700'</b>	<b>10000'</b> (1242')	THR34 Elev	<b>8758'</b>
					MSA THR34

**Aproximación frustrada:** Ascender a 16000' siguiendo la trayectoria RNAV hacia VUKID e incorporarse en el circuito de espera. MAX 160 KIAS hasta JR705.

**Aproximación frustrada con un motor inoperativo:** mantener empuje TOGA por 10 min.

- SE REQUIERE AUTORIZACION ESPECIAL PARA AERONAVE Y TRIPULACION. 2. Capacidad RF requerida.
- Para sistemas Baro/VNAV no compensados, aproximación no autorizada cuando la temperatura del aeródromo está bajo -5.0°C o sobre 30°C.
- EQUIPO REQUERIDO:** (2)FMGS, (2)MCDU, (2)FD, (2)AP, (4)EFIS DU, (2)L/DEV, (2)V/DEV, (1)RNP PB (if installed), (2)GPS, (3)IRU, (2)FCU, EGPWS.
- FMS setting:** THR RED / ACC EO ACC  
13500 / 13500 13500



CEILING REQUIRED			
C	Landing Weight menor o igual a (Packs on APU)	58,200 kg *	Landing Weight entre (Packs on APU)
			58,200 kg y 61,300 kg *
	APP climb Gradient	4.31%	APP climb Gradient
			3.66%
	DA (H)	10000' (1242')	DA (H)
			10300' (1542')
	VIS	5 km	

(\*) MLW por APP climb gradient y por pista DRY / WET



**SPHO / AYP**

Cor. Alfredo Mendivil

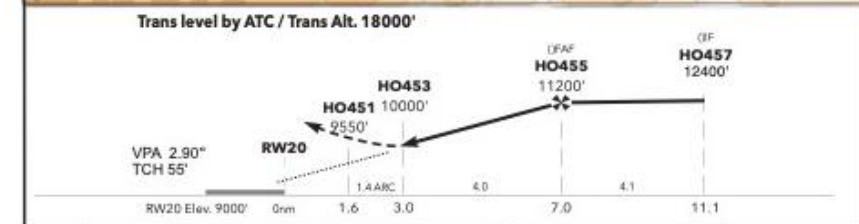
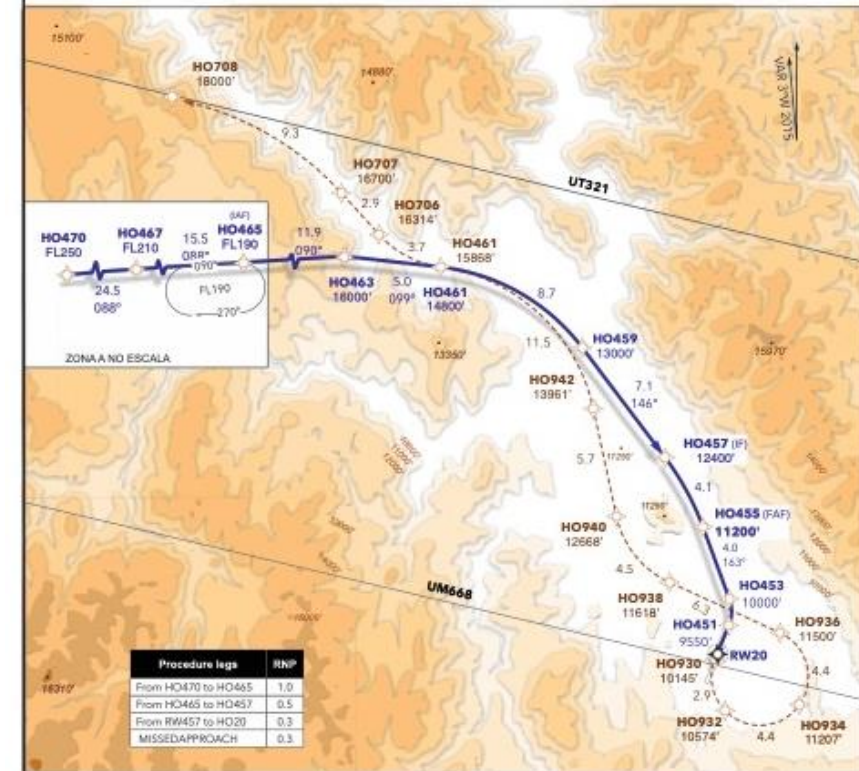
21 AGO 14 12-1 LP

**AYACUCHOPERU,**

RNAV (RNP) RWY 20

AYACUCHOTWR <b>118.1</b>		AYACUCHORADIO <b>121.9</b>		18000'	
RNAV	FINALCRS APCH	HO455 (FAF)	RNPDA 0.3 (H)	Apt elev.	9006'
	<b>206°</b>	<b>12000'</b>	<b>9930'</b> (930')	RWY 20	<b>9000'</b>
					MSA RWY20

MISSEDAPPROACH: Climb via the RNP (RNAV) Missed Approach track to HO708 +UT180 and continue on route FL321



NOTAS			
C	RNP	0.30	DA(H) <b>9930'</b> (930') - 5 km

CAMBIO: Se contigieron altitudes y trayectorias por realineamiento de rutas superiores.

# SECU SECA

SECU / CUE  
Mariscal Lamar

LAN  
14 MAY 13 12-1 XL

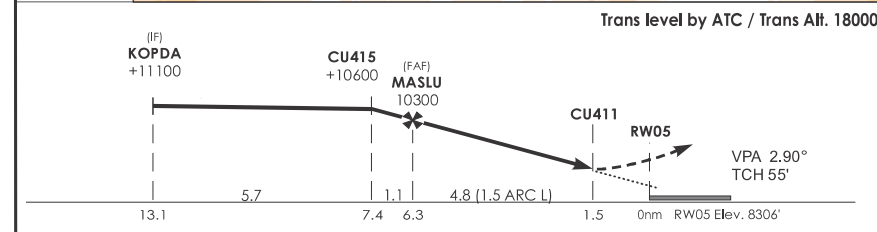
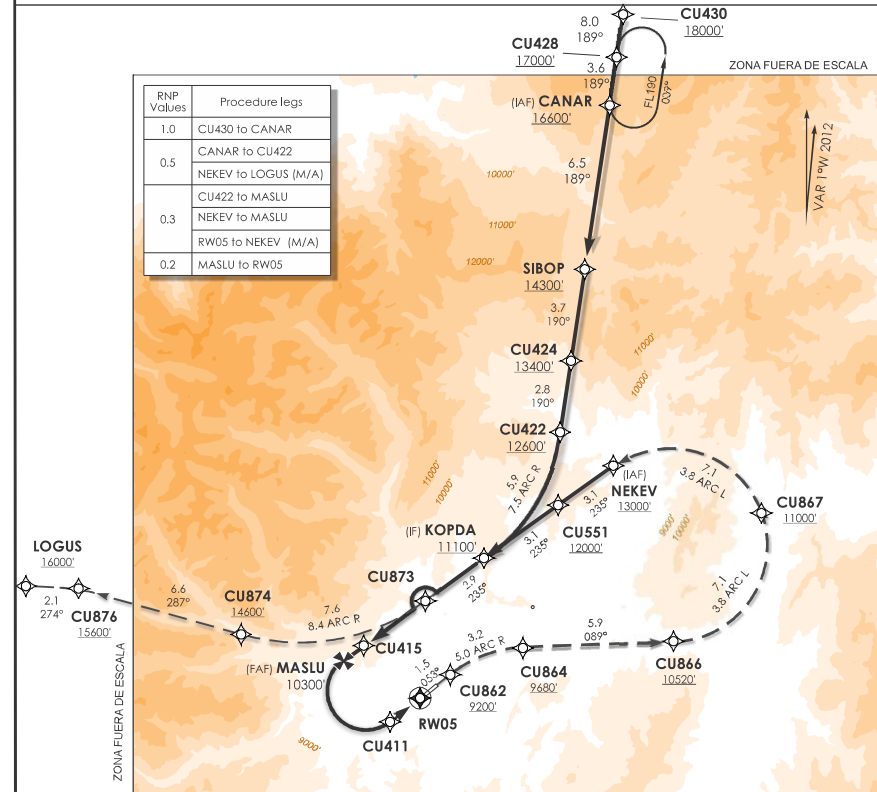
CUENCA, ECUADOR  
RNAV (RNP) RWY 05

SECA  
Ciudad de Catamayo

LATAM  
11 JAN 22 12-1 XL  
A319-132  
A320-232-230-214-2145K  
CATAMAYO, ECUADOR  
RNP Rwy 07 (AR)

CUENCA APP/TWR	122.3	GROUND	121.9	Apt elev. 8306' RWY05 . 8306'	17000'
RNAV	FINAL APCH CRS 053°	MASLU (FAF) 10300'	RNP 0.2 DA (H) 8900' (594)		

**MISSED APPROACH:** Climb via the RNAV (RNP) Missed Approach track to LOGUS +16000 FT. Expect ATC instructions.



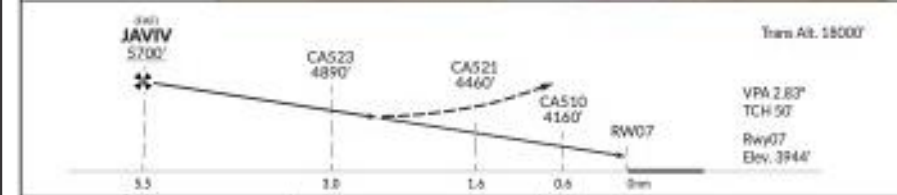
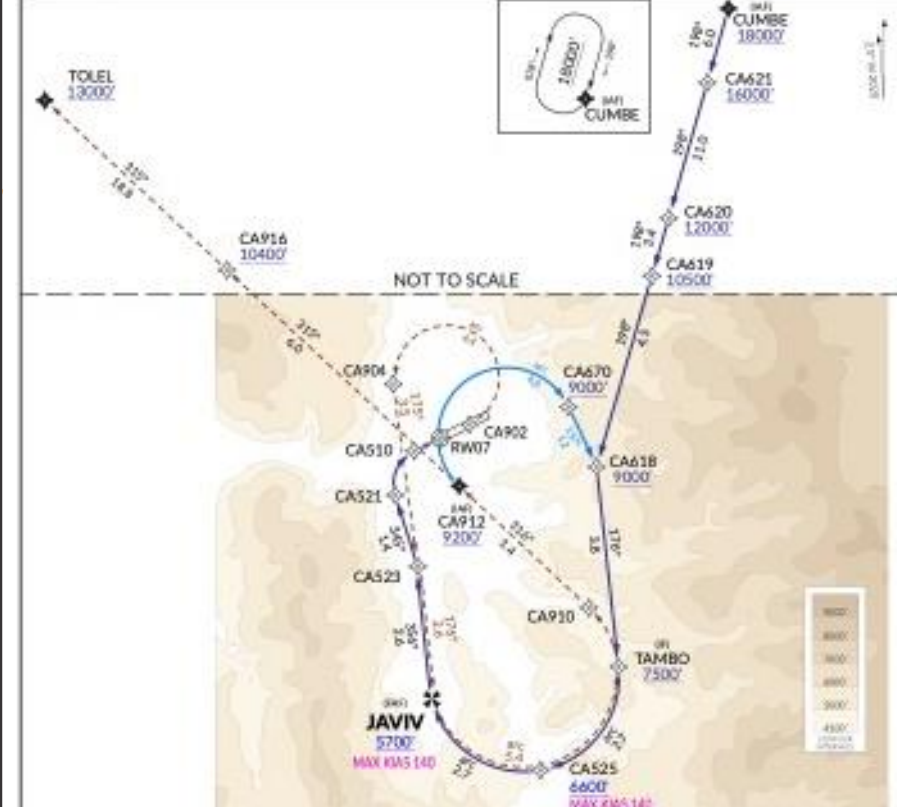
C	RNP 0.20	Misssd apch climb gradient min 4.0%	NOTAS 1) SE REQUIERE AUTORIZACION ESPECIAL PARA AERONAVE Y TRIPULACION. 2) Capacidad RF Requerido. 3) Para sistemas Baro/VNAV no compensados, aproximación no autorizada cuando la temperatura del AD está bajo 5°C o sobre 47°C. 4) Deselector CUV VOR.
		DA(H) 8900' (594) - 2500m	

CAMBIO: Cambio nombre waypoint CU426, ahora SIBOP.

CATAMAYO Tower	122.2	Apt elev. 4059' Rwy 07 Elev. 3944'	14800'
RNP	FINAL APCH CRS 067°		

Missed approach: Climb to 9200' via RNP path to CA912 for a new approach or continue to at 13000' to TOLEL.  
Missed approach RNP < 1.

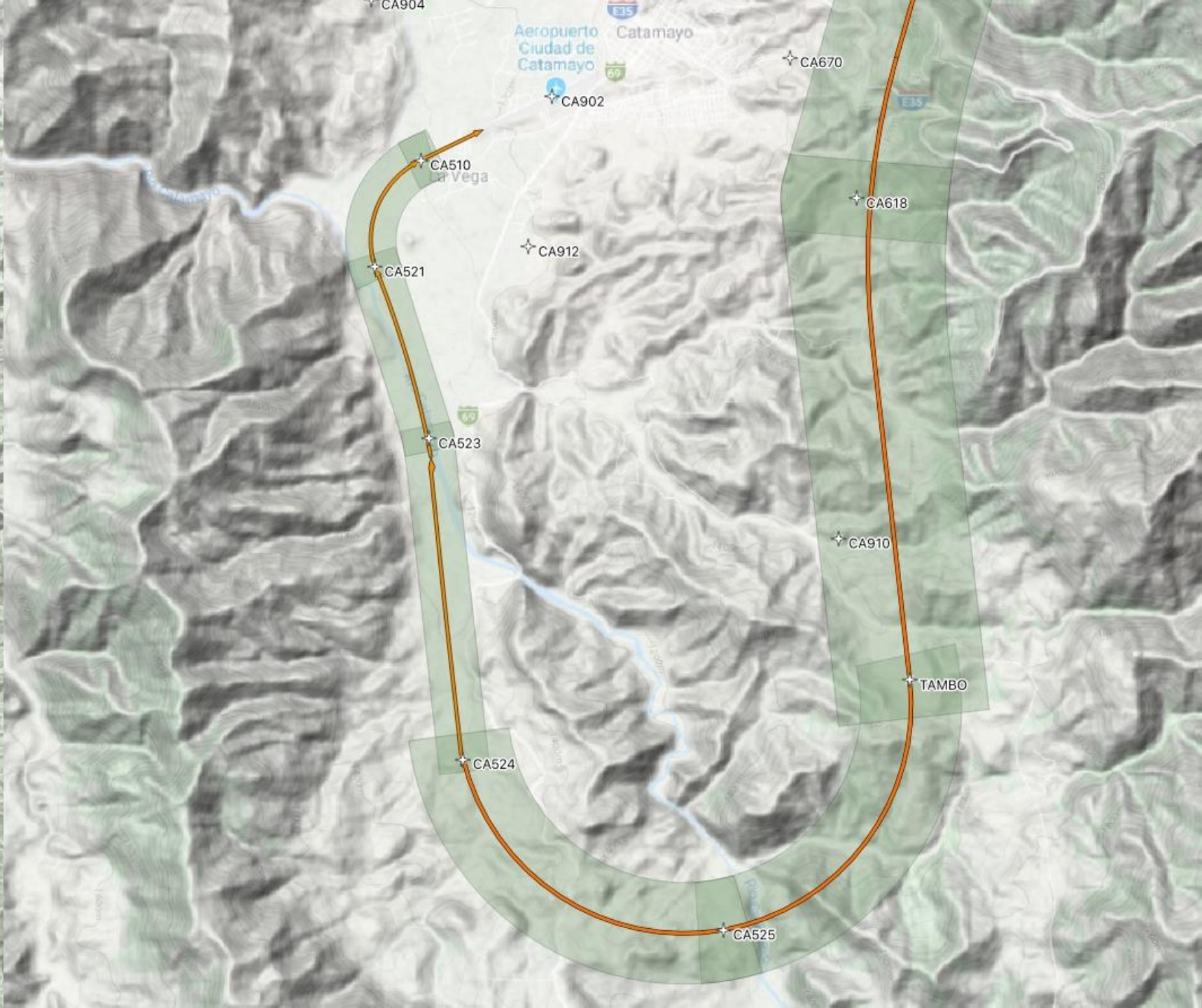
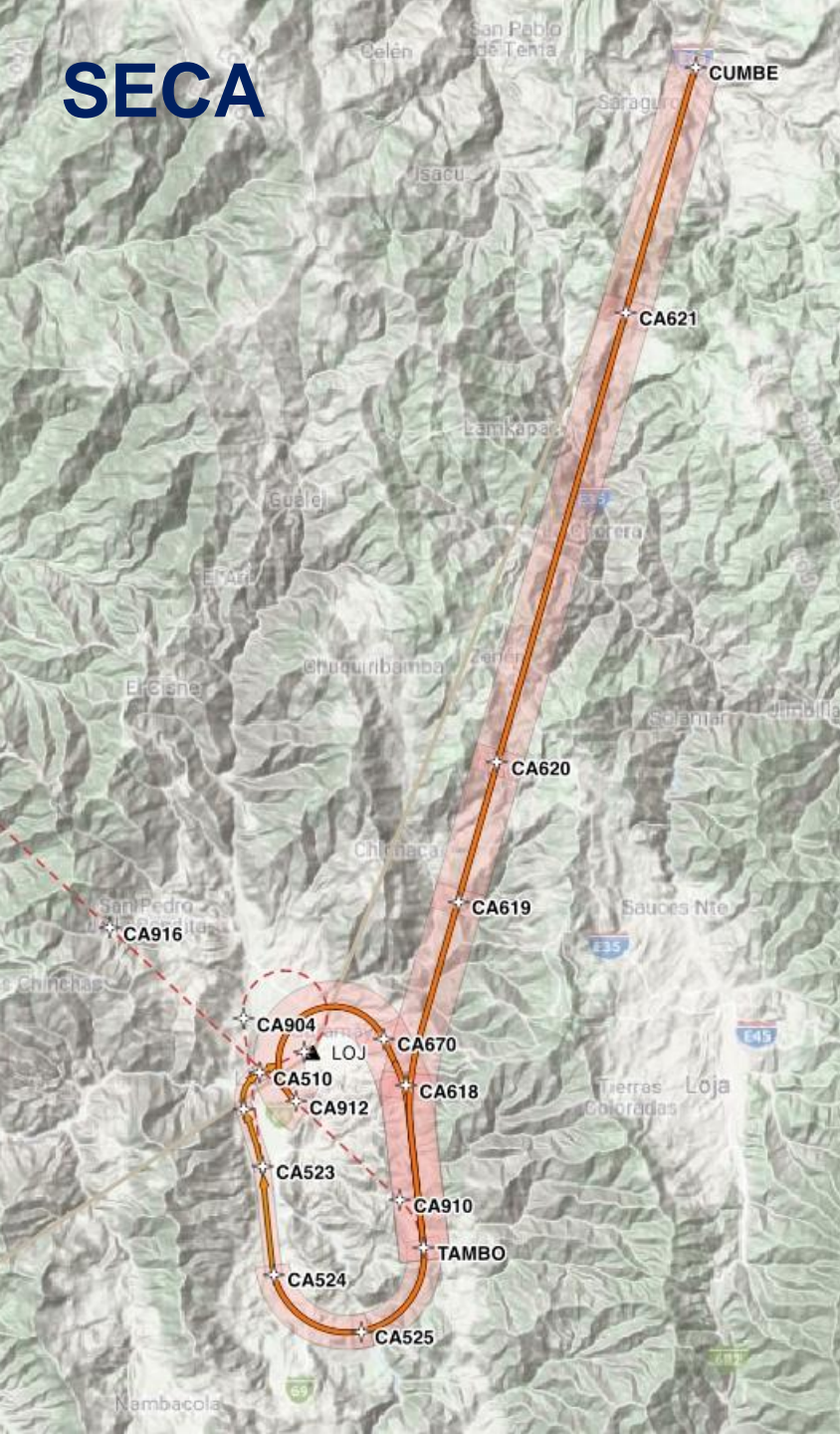
1. SPECIAL AUTHORIZATION REQUIRED. 2. GNSS required. 3. RNP 0.1 approved. 4. RF Required. 5. Procedure not authorized when airport temperature is below 8°C or above 40°C.

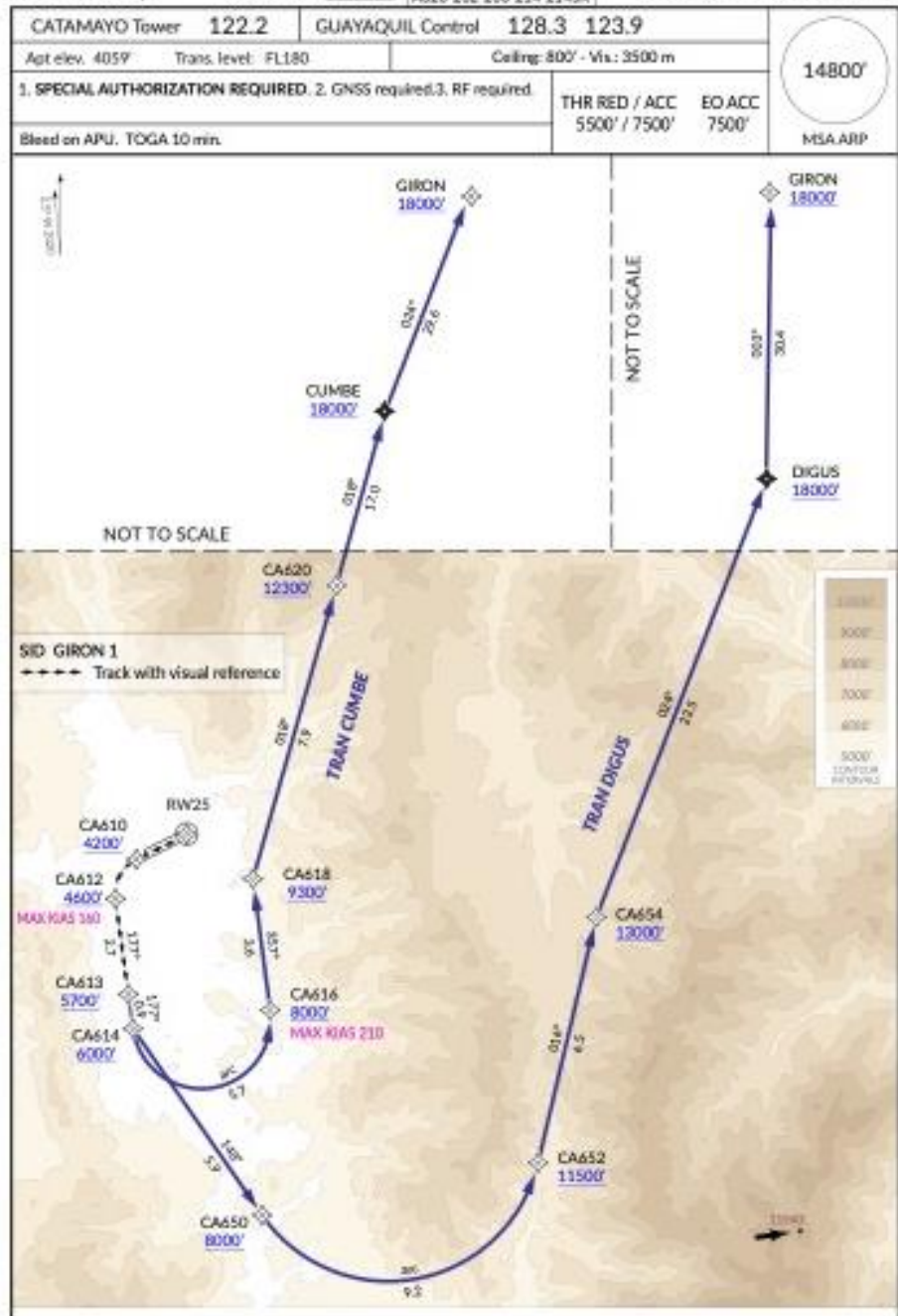


C	RNP 0.10	DA(H) 4700' (756)	Missed approach climb gradient: 2.5%
		vis 3500 m	

Changes: FAF designator now JAVIV

# SECA





Changes: New procedure.



### 1.3.2 Demonstrated RNP levels in Normal Conditions

The following RNP levels have been determined from test flights in normal conditions (without any failure), performed with the AP ON with various conditions of RF turn radius, wind, CG, and weight.

RNP AR (Normal conditions) *	With AP ON
Departure in NAV	0.10 NM
Approach in FINAL APP, NAV or APP NAV	0.10 NM
Missed approach in NAV	0.10 NM

(\*) Under normal conditions the assumption is made that there is no engine nor system failures during the whole operation.

### 1.3.3 Demonstrated RNP levels in non-normal conditions resulting from the EASA AMC20-26 requirements (section 6.1.3)

RNP levels in non-normal condition take into account path excursion upon failure occurring during the RNP operation.

The following RNP levels have been determined from flights tests and simulator sessions in non-normal conditions (engine failure & systems failures) with AP ON in a typical RNP demanding environment and are considered as envelope RNP levels following EASA assessment. Aircrew performance is assuming ad-hoc training in adequacy with the type and complexity of RNP operations being envisaged (see § 2.4)

The use of the hereunder table alleviate for the operator the need to perform a FOSA (see AMC 20-26 appendix5).

RNP AR with TF (straight) legs	With AP ON
Departure in NAV	0.12 NM
Initial and intermediate approach in NAV or APP NAV / final approach in FINAL APP	0.10 NM
Missed approach in NAV	0.12 NM

RNP AR with RF (turn) legs	With AP ON
Departure in NAV	0.20 NM
Initial and intermediate approach in NAV or APP NAV / final approach in FINAL APP	0.20 NM
Missed approach in NAV	0.20 NM

# SPHI

SPH / OX  
Cap FAP Jose A. Quiñones

LATAM  
21 OCT 21 12-1 LP A320 Fam

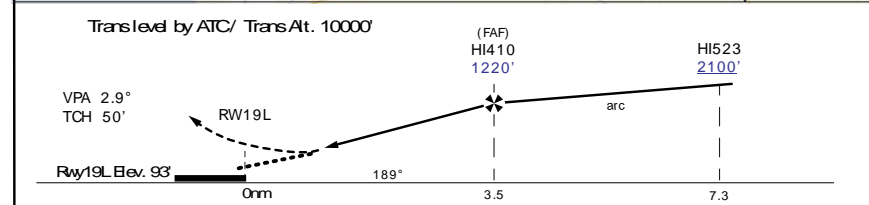
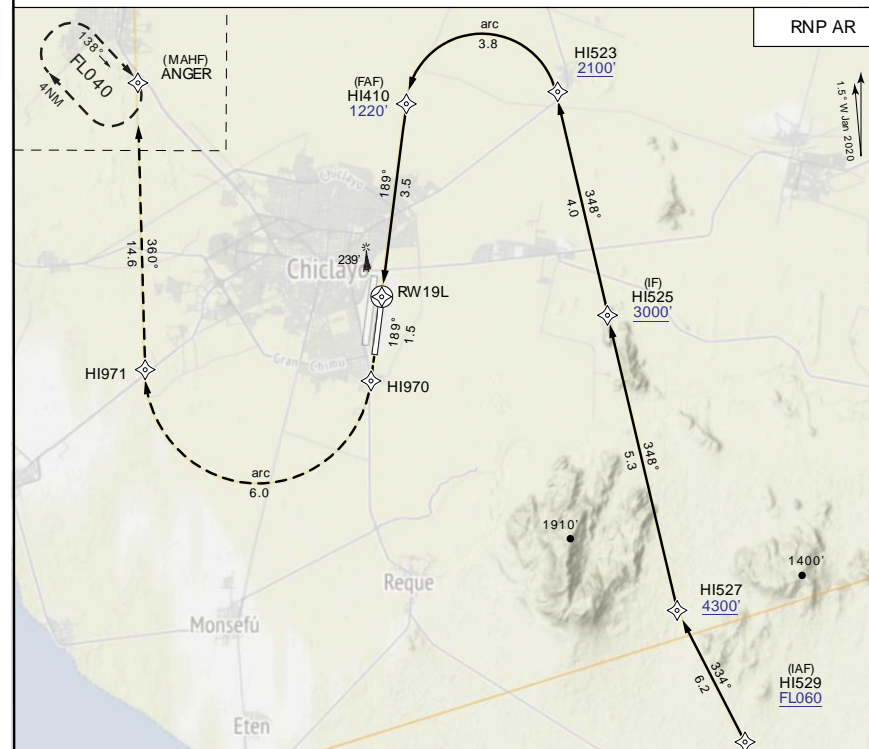
CHILAYO FERU  
RNP SRwy 19L (AR)



ATIS 132.5		APP/TWR 118.3		
RNP	FINAL APCH CRS 189°	HI410 (FAF) 1220'	RNP 0.3 DA(H) 600' (507')	

**Missed approach:** Climb to FL040 via the missed approach RNP track to ANGER and HOLD. Follow ATC instructions.

1. SPECIAL AIRCRAFT and AIRCREW AUTHORIZATION REQUIRED
2. GNSS required
3. FF Required
3. For uncompensated Baro/ WNAV systems, procedure not authorized below 5°C or above 54°C



C	RNP 0.30	DA(H) 600' (507') - 3000m
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Cambios: Trans Alt. updated.

# MROC

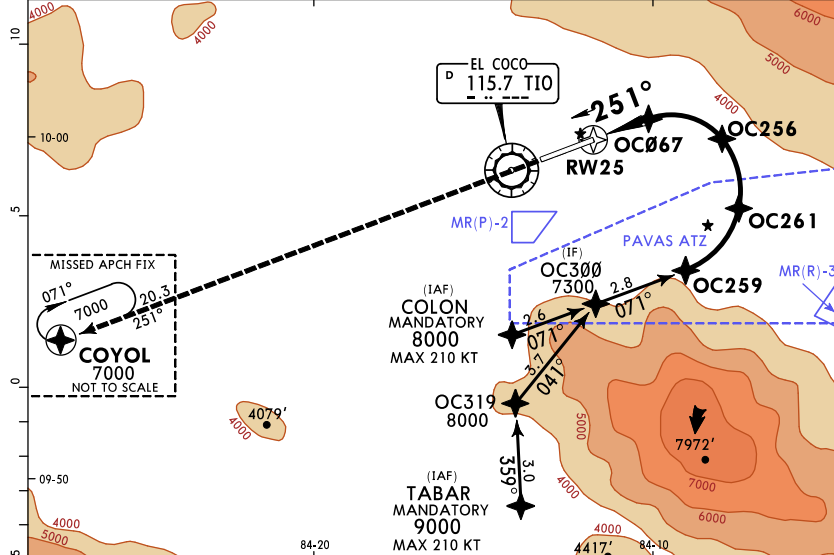
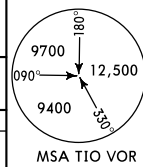
**MROC/SJO**  
(ALAJUELA)  
JUAN SANTAMARIA INTL  
RNP W Rwy 25 (AR)

JEPPESEN  
18 FEB 22 (12-21)

ATIS 127.675	COCO Center (R) 119.6	*COCO Approach (R) 120.5	COCO Tower 118.6	Ground 121.9
RNAV	Final Apch Crs 251°	OC256 4700' (1673')	RNP 0.15 DA(H) 3427' (400')	Apt Elev 3048' Rwy 3027'

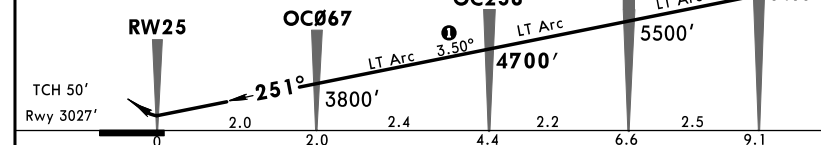
MISSED APCH: Climb on course 251° to 7000' and hold at COYOL, wait for ATC instructions.

Alt Set: INCHES Trans level: FL 200 Trans alt: 19000'  
RNP AR Apch 1. RF authorization required. 2. For uncompensated Baro-VNAV systems, procedure not authorized below 0°C or above 40°C.



DIST to THR	1.0	2.0	OC256
ALTITUDE	3449'	3800'	4700'

Vertical path angle of 3.50° required for clearance of obstacle 2 miles Southeast of RW25.



Gnd speed-Kts	70	90	100	120	140	160			
Glide Path Angle	3.50°	434	557	619	743	867	991		
MAP at RW25									
OC256 to RW25	4.4	3:46	2:56	2:38	2:12	1:53	1:39		

STRAIGHT-IN LANDING RWY 25	
RNP 0.15 DA(H) 3427' (400')	RNP 0.30 DA(H) 3517' (490')
A B C D	2800m
A B C D	2800m

CHANGES: Altimeter units. © JEPPESEN, 2016, 2022. ALL RIGHTS RESERVED.

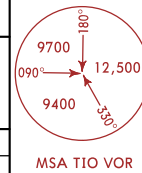
**MROC/SJO**  
(ALAJUELA) JUAN SANTAMARIA INTL  
(ALSO SERVES TOBIAS BOLANOS INTL)  
RNP W Rwy 25

JEPPESEN  
18 FEB 22 (19-1)

ATIS 127.675	COCO Center (R) 119.6	*COCO Approach (R) 120.5	COCO Tower 118.6	Ground 121.9
VOR TIO 115.7	Final Apch Crs- Refer to Planview	No FAF	CEIL-VIS 1500' -5.0 km	Apt Elev 3027'

MISSED APCH: Climb to 7000' and hold visual segment of flight legs, expect ATC instructions.  
TOBIAS BOLANOS INTL: Expect ATC instructions.

Alt Set: INCHES Trans level: FL 200 Trans alt: 19000'  
MAX 160 KT.



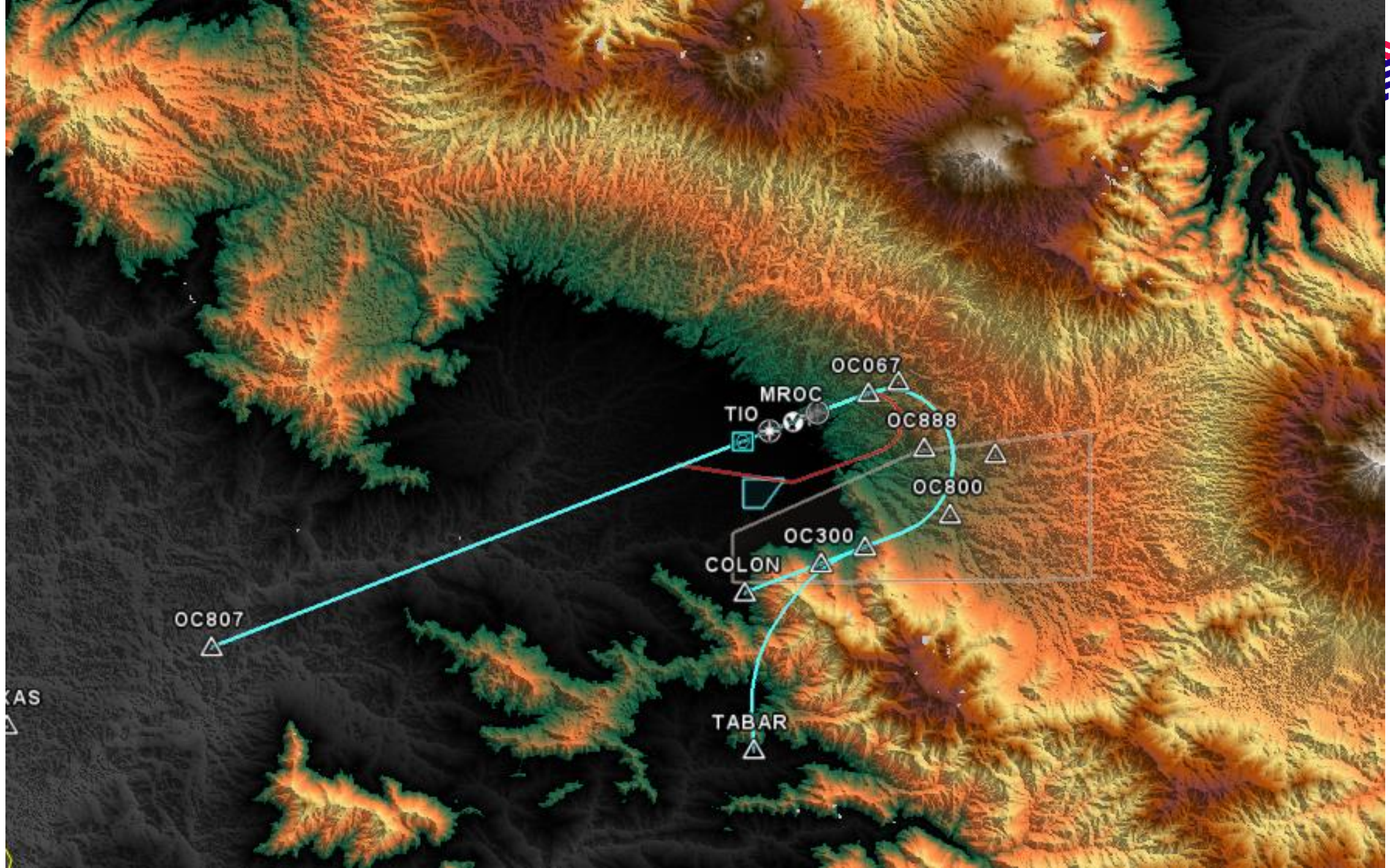
### REPORTING POINT DESCRIPTIONS

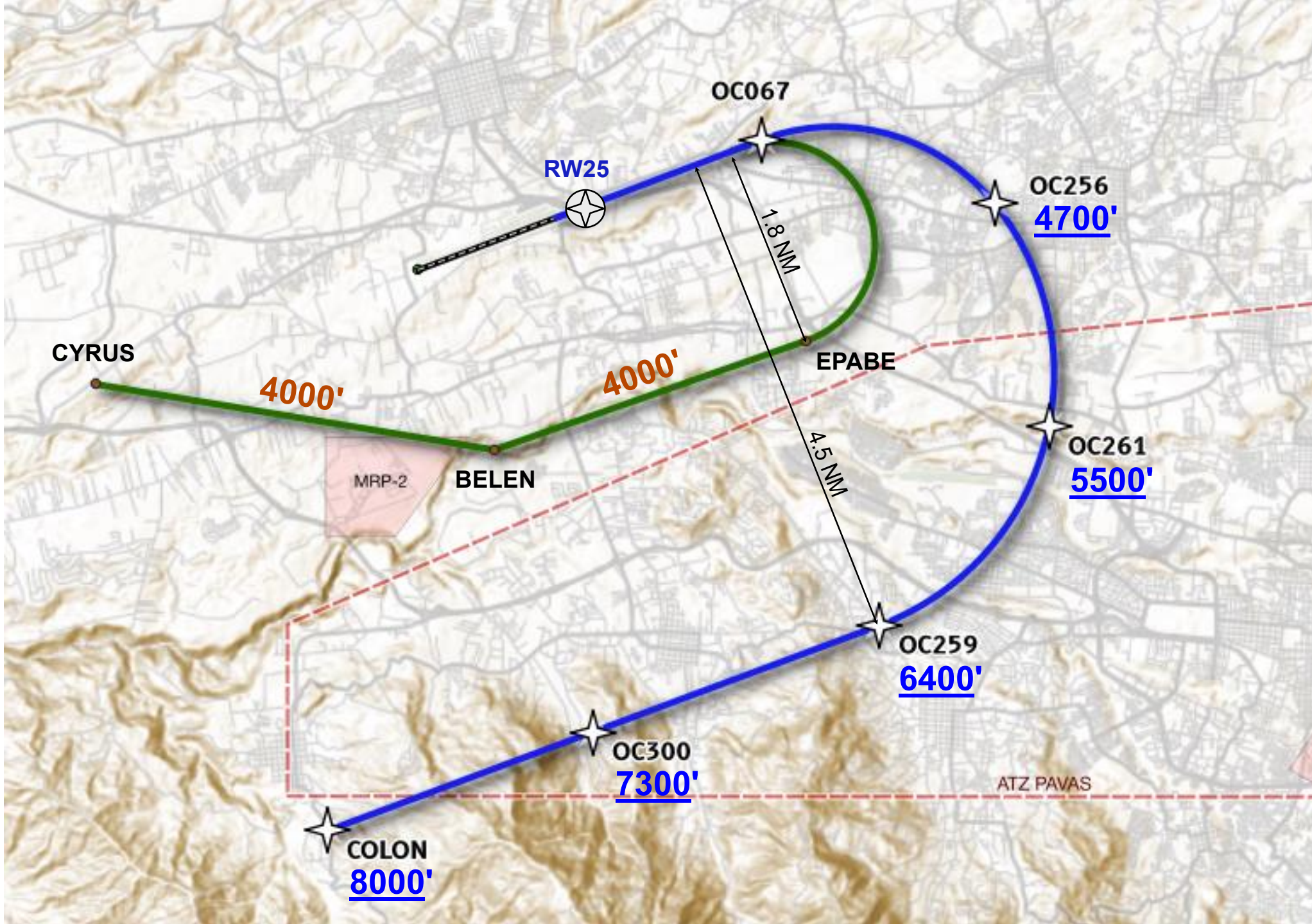
- CYRUS:** CROSSING ROADS BETWEEN CIRUELAS AND SAN RAFAEL OF ALAJUELA.
- BELEN:** BELEN HYDROELECTRIC PLANT
- EPABE:** EPA WARDWARE SHOP ON CARIARI BRIDGE CROSSING GENERAL CANAS HIGHWAY.
- FANAL:** MANOLOS OLD HALL ON LA GARITA CROSSING, ROUTE 1.

Lighting - Refer to Airport Chart	<b>7000'</b> ↑
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WEATHER MINIMUMS	
Ceiling 1500' - VIS 5.0 km	

CHANGES: Altimeter units. © JEPPESEN, 2012, 2022. ALL RIGHTS RESERVED.

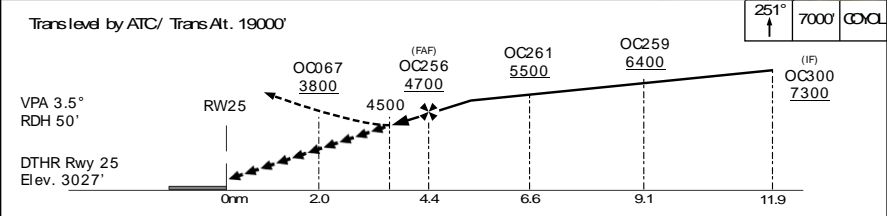
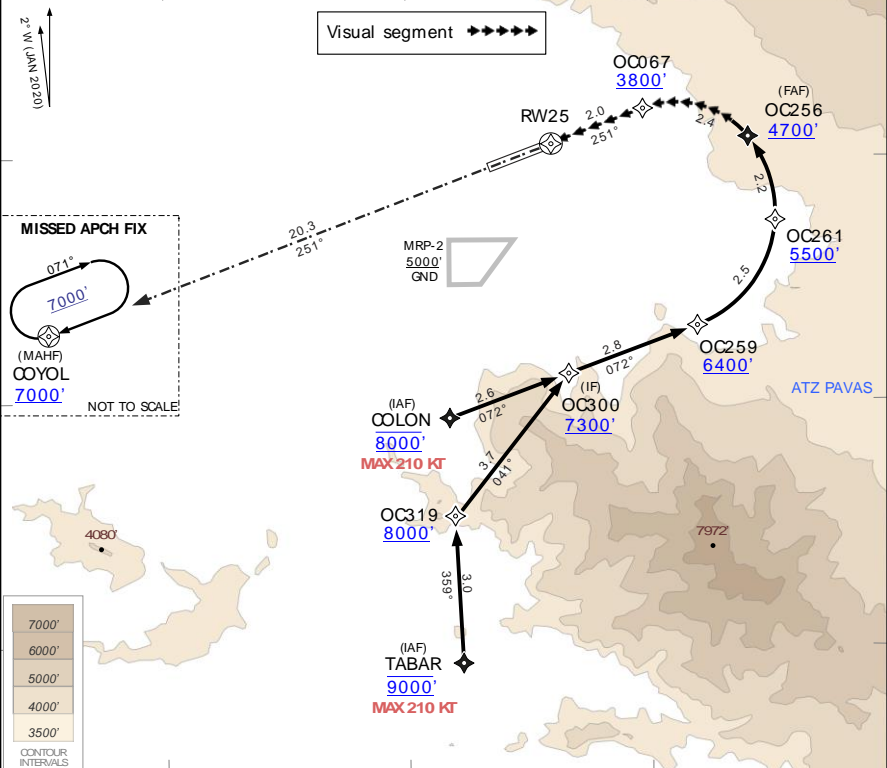




ATIS 126.9	COO ACC 119.6	COO APP 120.5	COO TWR 118.6	Ground 121.9	<p>MSA ARP</p>
RNP	FINAL APCH CRS 251°	OC256 (FAF) 4700'	RNP0.30 D(H) 4500' (1473')	Apt Elev. 3048' Rwy 25 Elev. 3027'	

Aproximación frustrada: Ascender a 7000' siguiendo la trayectoria RNP hacia COYL e incorporarse en el circuito de espera. Esperar instrucciones del ATIS

1. Capacidad RF Requerida 2. Para sistemas Baro/VNAV no compensados, aproximación no autorizada cuando la temperatura del aeropuerto está bajo 0°C o sobre 40°C



<b>RNP0.3</b>		Ground speed - KT	100	120	140	160	180
A	COA(H) 4500' (1473') - 5000m	FPM (GP 3.5°) 6.12%	619	743	867	991	1115
B		FAF (OC256) to RW25	2:38	2:12	1:53	1:39	1:28
C							
D							



EVALUACION EN SIMULADOR DE VUELO		
	SI	NO
7. Comparación Nav Data con Carta	●	
8. Procedimiento evaluado a 100' debajo del DA/MDA	●	
9. Procedimiento evaluado más rapido / lento que la Carta		●
10. Evaluado a los límites superior / inferior de temperatura	●	
11. Flyability	●	
12. Deselección de radioayudas	●	
13. Evaluado noche/IMC		●

EVALUACION DE CARTA		
	SI	NO
14. Carta con suficientes detalles	●	
15. RNP < 1.0 en aproximación frustrada	●	
16. Nota capacidad RF requerido	●	
17. Nota velocidad no estándar		●
18. Nota régimen ascenso en frustrada no estándar		●
19. Nota límites de temperatura	●	
20. Carta conforme a trayectoria de vuelo	●	

EVALUACIÓN DE LOS SEGMENTOS					
	INICIAL	INTERMEDIA	FINAL	FRUSTRADA	HLDG
21. Rumbo del segmento	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló
22. Distancia	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló
23. Ángulo de aproximación					
24. Longitud del segmento	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló
25. EGPWS Warning / Alert	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló	Pasó ● Falló
26. Componente de viento					
27. Ángulo de banqueo					

28. Actividades realizadas  
 MLW 147871kgs, tail wind Max 15kts, vuelo manual y automático satisfactorio y cumpliendo trayectorias.  
 Se realizan 5 aproximaciones en condiciones VFR vientos de cola y de frente hasta 15kts



TEL/FAX: (506) 2106-9093  
AFS: MROCYOYX  
Página web: [www.dgac.go.cr](http://www.dgac.go.cr)  
E-mail: [aiscr@dgac.go.cr](mailto:aiscr@dgac.go.cr)

REPÚBLICA DE COSTA RICA  
DIRECCIÓN GENERAL DE AVIACIÓN CIVIL  
Departamento de Servicios de Navegación Aérea  
Unidad de Servicios de Información Aeronáutica  
APDO. POSTAL 5026 -1000  
SAN JOSE – COSTA RICA



AIP  
**AIRAC**  
Suplemento 29  
24 MAR 2022

**AD**

**CARTA DE APROXIMACIÓN POR INSTRUMENTOS**

**RNP V RWY 25**

**AEROPUERTO INTERNACIONAL JUAN SANTAMARÍA**

**(MROC)**

La Dirección General de Aviación Civil comunica que, efectivo el **19 de mayo de 2022** y hasta el **19 de mayo de 2023**, entra en vigor la nueva Carta de Aproximación por Instrumentos **RNP V RWY 25**, del Aeropuerto Internacional Juan Santamaría (MROC).



