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**REPUBLIC OF COSTA RICA**  
**CIVIL AVIATION AUTHORITY**  
 Air Navigation Services Department  
 Aeronautical Information Services Unit  
 P.O. BOX 5026 -1000  
 SAN JOSE – COSTA RICA

**AIC**  
**Series A**  
**17**  
**07 OCT 2021**

**CNS**

**RISK ANALYSIS FOR ILS GLIDE PATH USE**  
**GREATER THAN 3 DEGREES**  
**DANIEL ODUBER QUIRÓS INTERNATIONAL AIRPORT**

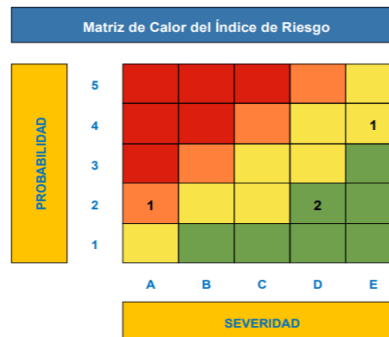
The Civil Aviation Authority, in coordination with the Central American Air Navigation Corporation (COCESNA) and the Costa Rican Air Navigation service provider; informs the operators and airlines that operate at the Daniel Oduber Quirós International Airport that, on July 28, 2021, a Risk Analysis was carried out for the use of the Glide Path with a glide path greater than the optimum of 3 degrees, for an RDH of 71 feet.

**B. Análisis del Riesgo**

**a. Evaluación Efectividad y Controles**

Componentes específicos del peligro	Consecuencias relacionadas con el peligro	Evaluación, Efectividad de Controles		Índice de Riesgo		
		Defensas actuales para controlar el riesgo	Probabilidad	Severidad	Índice de riesgo	
La operación del Glide Slope de MRLB con una senda de planeo mayor que la óptima de 3 grados	Incidente	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	D	Green	
	Accidente	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	A	Orange	
	Toma de contacto posterior al TouchDown Zone Elevation (TDZE)	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	4	E	Yellow	
	Aproximación Desestabilizada	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	D	Green	

**b. Matriz de Calor del Índice de Riesgo**



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One specific component related to the hazard is identified; its consequences and its risk index, which are detailed below:

- a) Operation of the MRLB Glide Slope with a greater than optimal glide slope of 3 degrees:
1. Incident, located in the heat matrix of the risk index in an 'ACCEPTABLE' region with a probability level 'UNLIKELY' and a severity level 'MILD' (2D).
  2. Accident, located in the heat matrix of the risk index in a region 'NOT RECOMMENDED' with a probability level 'IMPROBABLE' and a severity level 'CATASTROPHIC' (2A).
  3. Contact after TouchDown Zone Elevation (TDZE), located in the heat matrix of the risk index in a region 'TOLERABLE' with a probability level 'OCCASIONAL' and a severity level 'INSIGNIFICANT' (4E).
  4. Unstable Approach, located in the heat matrix of the risk index in an 'ACCEPTABLE' region with a probability level 'IMPROBABLE' and a severity level 'SLIGHT' (2D).

a. Plan de Tratamiento de Riesgo

Componentes específicos del peligro	Consecuencias relacionadas con el peligro	Evaluación, Efectividad de Controles	Índice de Riesgo		Plan de Tratamiento de Riesgos		IRM			
		Defensas actuales para controlar el riesgo	Probabilidad	Severidad	Índice de riesgo	Respuesta / Tratamiento al Riesgo	Acciones posteriores para reducir el riesgo	Probabilidad	Severidad	Índice de riesgo
La operación del Glide Slope de MRLB con una senda de planeo mayor que la óptima de 3 grados	Incidente	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	D	Acceptar					
	Accidente	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	A	Convivir					
	Toma de contacto posterior al TouchDown Zone Elevation (TDZE)	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	4	E	Convivir					
	Aproximación Desestabilizada	1. Ajuste del patron de antenas 2. Referencia visual ILS CAT 1	2	D	Acceptar					

- b) Heat Matrix of the Mitigated Risk Index since the consequences of the generic hazard do not require mitigation, a mitigated risk index matrix is not presented.



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In addition, from the perspective of the design of flight procedures, correction methods are already established, so that an RDH greater than 18 m does not represent a violation of obstacle clearance. For this, an attempt was made to analyze the precision section of an ILS procedure to runway 07 of the Daniel Oduber International Airport, (by means of the specialized software for the design of flight procedures Geo TITAN), and the evaluation could be carried out correctly; (Only a warning message was displayed informing that the RDH value was outside the tolerance range, but this did not prevent the software from making OAS corrections, evaluating obstacles, and determining an-OCA/H).

### **Conclusions**

The CENAMER ACC air traffic service safety risk analysis and evaluation identifies a specific component related to the danger of "Radio aids for the approach (Glide Path)" and its consequences related to each specific component, which is detailed below. continuation:

1. Operation of the MRLB Glide Path with a greater than optimal glide slope of 3 degrees  
Incident
2. Accident
3. Touchdown after TouchDown Zone Elevation (TDZE)
4. destabilized approach

As a conclusion from the PANS-OPS point of view, having an RDH value greater than 18 m does not violate principles of obstacle clearance or ICAO standards.

### **Recommendations**

It is not necessary to implement any action plan, since the consequences do not require mitigation.

It is recommended to define a review date for the risk assessment of the following consequences:

- a) Operation of the MRLB Glide Path with a greater than optimal glide slope of 3 degrees:
  1. Accident
  2. Post-TouchDown Zone Elevation (TDZE) touchdown

Therefore, its use is at the discretion of the users.