



ICAO

International Civil Aviation Organization
North American, Central American and Caribbean Office

INFORMATION PAPER

GTE/18 — IP/03

14/09/18

CAR/SAM Planning and Implementation Regional Group (GREPECAS) Eighteenth Scrutiny Working Group Meeting (GTE/18)

Mexico City, Mexico, 22 – 26 October 2018

Agenda Item 3: Large Height Deviation (LHD) analysis c) Lessons learned by CAR/SAM States to reduce the number of LHDs

LHD MITIGATION MEASURES IMPLEMENTATION – PROGRESS BY TRINIDAD AND TOBAGO

Presented by Trinidad and Tobago

EXECUTIVE SUMMARY

This Information Paper contains a Large Height Deviations (LHD) analysis for the period 2009 to 2017 with focus on 2017 and provides an update on the progress made by the Trinidad and Tobago ANSP to mitigate the occurrences of within the Piarco FIR/CTA/UTA.

<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency
------------------------------	---

1. Introduction

1.1 Piarco FIR/CTA/UTA is adjoined by nine (9) adjacent FIRs/CTAs (**Appendix A**), namely, San Juan (TJZS), New York (KZNY), Santa Maria (LPPO), SAL (GVSC), Dakar (GOOO), Cayenne (SOOO), Paramaribo (SMPM), Georgetown (SYGC) and Venezuela (SVZM). The ANSP has been recording and analysing reportable LHD occurrences attributable to Piarco ACC for a period of at least eight (8) years from 2009. This data is disseminated to CARSAMMA monthly. Various strategic approaches are used in an attempt to mitigate the occurrences attributable to Piarco.

2. Discussion

2.1 **Appendix B** provides data collected on LHD occurrences attributable to Piarco Area Control Centre (ACC) from 2009 to 2017. The trend over the last eight (8) years has shown a general decrease of such occurrences. For the period January to August 2018, five (5) LHD occurrences attributable to Piarco ACC have been reported compared to eight (8) reported LHD occurrences attributable to Piarco ACC for the same period in 2017. In an attempt to mitigate occurrences, the ANSP employs a number of strategic approaches mentioned below.

- Gathering and assessing safety data associated with the LHD occurrences (**Appendices B, C, D, E and F**);

- Collaboration with ANSP Departments (e.g. ATS, AIM and CNS);
- Sharing safety data and collaboration with ANSPs responsible for providing ATS in the adjacent FIRs/CTAs;
- Sharing safety data and collaboration with concerned airline operators;
- Continuance in reinforcing the importance of adhering to SOPs;
- Establishing a Voluntary Reporting Programme;
- Encouraging voluntary use of the Critical Incident Stress Management (CISM) Programme and Employee Assistance Programme (EAP) to help deal with work stress related issues that can impact performance; and
- Generating safety awareness through:
 - Remedial actions inclusive of safety de-briefings performed with the concerned ANS Staff, and
 - Dissemination of Information Bulletins related to LHD occurrences to ANS Staff.

2.2 Since employing the strategic approaches, the ANSP continues to observe a decreasing trend (Appendix B) in the number of LHD occurrences attributable to Piarco ACC from 2011 onwards. It is hoped that there is a direct correlation between the strategic mitigation approaches and the observed trend.

2.3 Our safety assessments continue to show that “practical drift” and the non-adherence to Standard Operating Procedures (SOPs) play major contributing roles in the occurrence of LHDs attributable to Piarco ACC.

2.4 A more recent attempt to create safety awareness and assist in the mitigation of LHD events, involved establishing a Voluntary Reporting Programme in June 2018, through the introduction of an ANS SMS Hazard Identification Form and, ANS SMS Risk Assessment and Mitigation Form for the ANS Facilities (Appendix F).

2.5 The following strategies are still to be adopted:

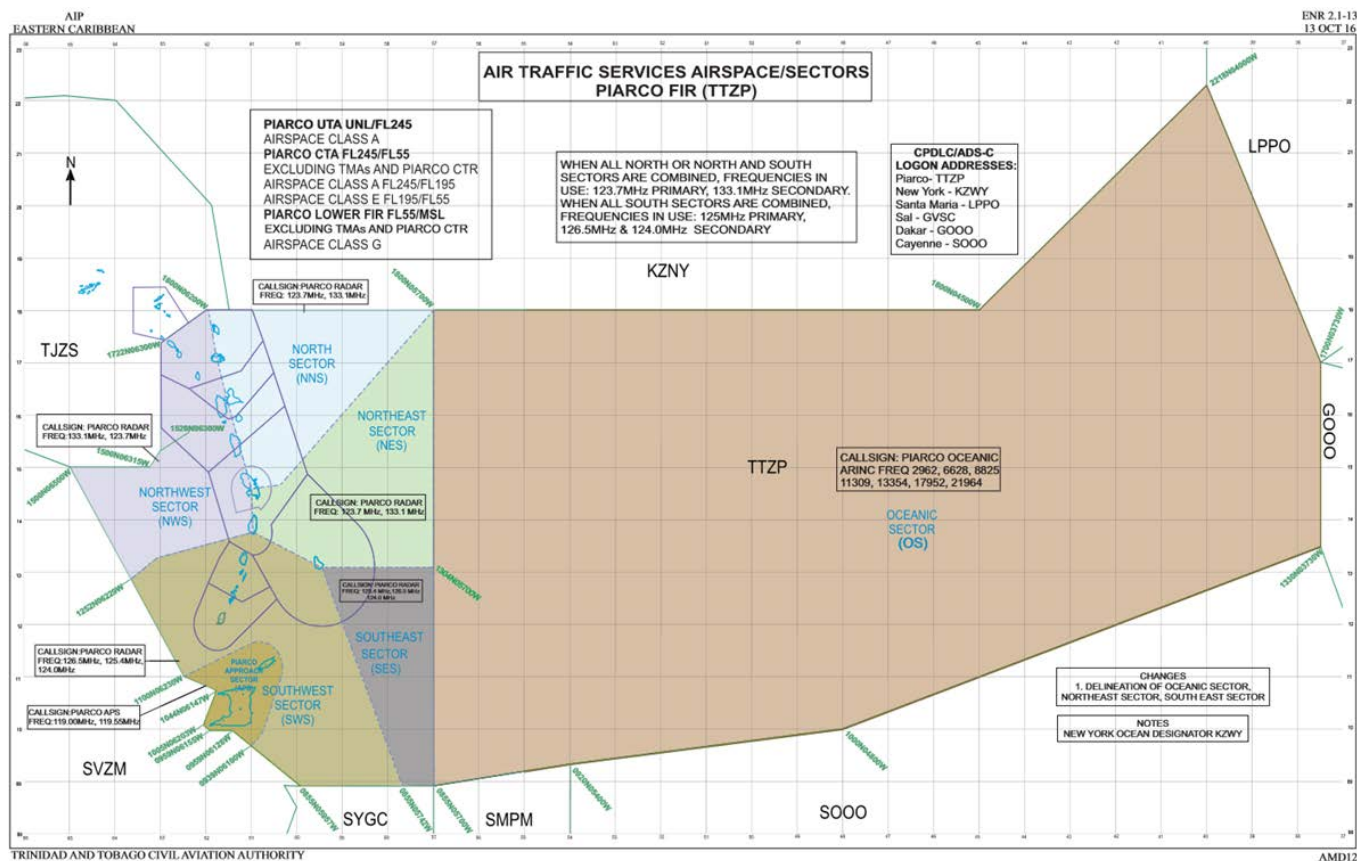
- Implementing a Normal Operations System Survey (NOSS) Programme;
- Continuance in addressing “Threat and Error” issues associated with “practical drift” and the coordination of flights between Piarco ACC and Adjacent ANSPs;
- Written and Oral Knowledge Verification Tests (KVTs) as part of ATS Proficiency Checks. ATIs and ATEs to be subjected to biannual Proficiency Checks with an higher pass mark required;
- Scheduled refresher training every two (2) years;
- Identifying and introducing Quality Assurance Officers on each Shift;
- Upgrade of the ATM Automated System and implementation of AIDC; and
- Possible implementation of Radar hand-offs with adjacent FIRs/CTAs and TMAs.

2.6 Trinidad and Tobago is currently engaged in updating its ATM Automated System and these updates along with the implementation of AIDC should become available in the first quarter of 2020.

3. Suggested actions:

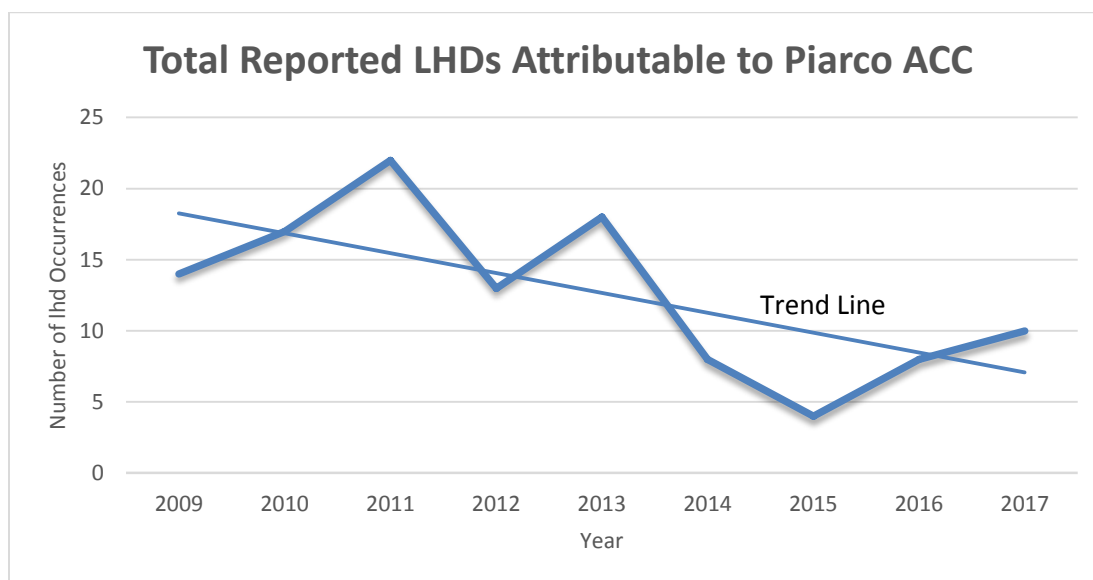
3.1 The Meeting is invited to note the information contained in this Information Paper.

APPENDIX A
Piarco's FIR/CTA/UTA with Adjacent FIRs/CTAs



APPENDIX B
LHD Occurrences Attributable to Piarco ACC for the Years 2009 to 2017

MONTH	YEAR								
	2009	2010	2011	2012	2013	2014	2015	2016	2017
JANUARY	0	2	2	1	3	1	1	0	1
FEBRUARY	4	0	0	0	0	1	0	2	2
MARCH	0	2	2	2	2	1	0	0	3
APRIL	0	2	3	1	2	0	1	1	0
MAY	1	0	2	1	1	1	0	0	1
JUNE	1	1	2	0	2	0	0	1	0
JULY	0	1	0	1	0	1	0	0	1
AUGUST	1	1	3	1	3	0	1	1	0
SEPTEMBER	0	1	1	1	2	0	1	0	1
OCTOBER	3	3	2	0	0	1	0	0	0
NOVEMBER	2	1	2	1	0	0	0	1	1
DECEMBER	2	3	3	4	3	2	0	2	0
TOTAL	14	17	22	13	18	8	4	8	10



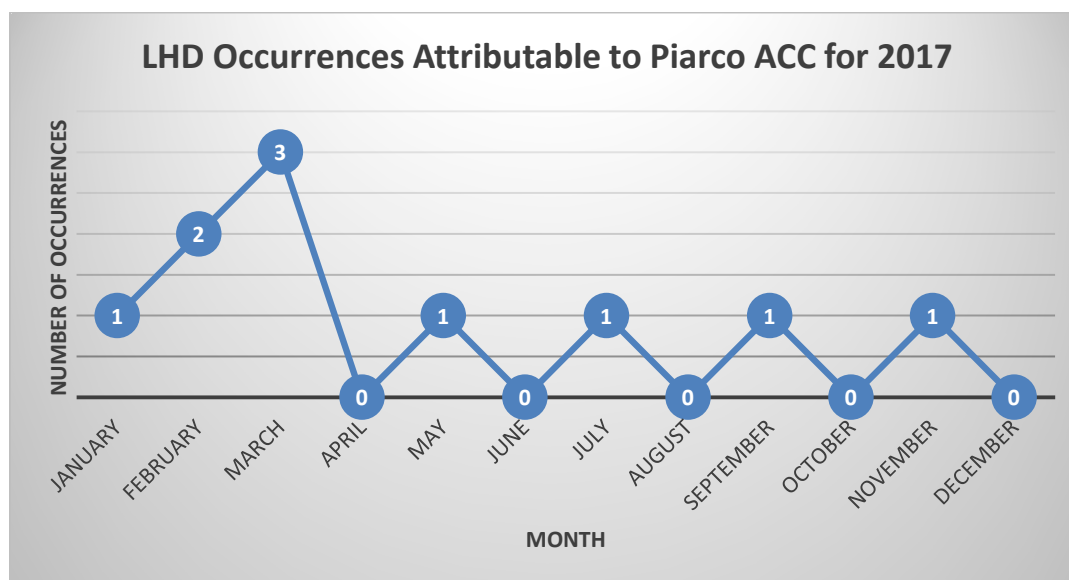
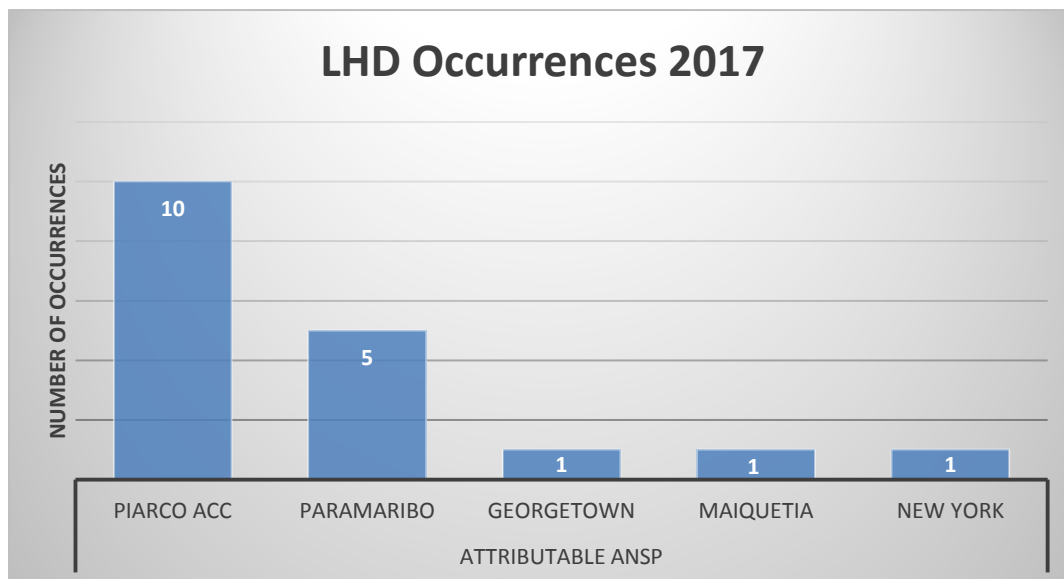
APPENDIX C

Details of LHD Occurrences Attributable to Piarco ACC for 2016

ERROR ATTRIBUTED TO:	NO OF ERRORS	RESULTING FROM...	LHD CATEGORY CODE	SECTOR INVOLVED	NON-COORDINATION	ERROR IN COORDINATION
1. PIARCO ACC (31-01-2017 TOM109 and AVA011)	1	Piarco ACC coordinated TOM109 with New York ARTCC at position GLAAS at 2233UTC FL400. New York ARTCC read-back 2223UTC FL400 and Piarco ACC did not realise that New York ARTCC read-back an erroneous estimate. TOM109 logged on with New York ARTCC at 2237UTC, four (4) minutes into New York's airspace. The aircraft conflicted with converging traffic AVA011 inbound to Piarco's airspace.	E	EOS		1
2. PIARCO ACC (04-02-2017 VIR30V)	1	Piarco ACC did not coordinate VIR30V with New York ARTCC at position FISST. The aircraft checked FISST at 2227UTC FL370. New York ARTCC called Piarco ACC to query the non-coordination of the flight.	E	EOS	1	
3. PIARCO ACC (26-02-2017 TAM8092)	1	Piarco ACC coordinated TAM8092 with San Juan CERAP at position ANADA at FL380. Piarco ACC later cleared the flight to FL400 and did not coordinate the revised flight level with San Juan CERAP.	E	NS Combined	1	
4. PIARCO ACC (06-03-2017 JBU1020)	1	Piarco ACC coordinated JBU1020 with San Juan CERAP at position ANADA at FL360. The flight requested and was issued a clearance to maintain FL320 by Piarco ACC. Piarco ACC did not recoordinate the flight with San Juan CERAP. San Juan CERAP called Piarco ACC to advise them of the miscoordination.	E	NS Combined	1	
5. PIARCO ACC (12-03-2017 FWI511)	1	Piarco ACC coordinated FWI511 with New York ARTCC at position DRDGE at 2355UTC FL380. The flight checked position DRDGE at 2333UTC without being recoordinates . New York ARTCC called Piarco ACC to inform of the miscoordination.	E	NS Combined	1	

ERROR ATTRIBUTED TO:	NO OF ERRORS	RESULTING FROM...	LHD CATEGORY CODE	SECTOR INVOLVED	NON-COORDINATION	ERROR IN COORDINATION
6. PIARCO ACC (29-03-2017 AFR480)	1	Piarco ACC coordinated AFR480 with Paramaribo ACC at position TRAPP at 1847UTC FL360. The aircraft crossed position TRAPP one hour earlier at 1747UTC. Paramaribo ACC informed Piarco ACC of the miscoordination.	E	SES		1
7. PIARCO ACC (20-05-2017 DAL200)	1	New York ARTCC coordinated DAL200 with Piarco ACC at position 1916N04335W at 0513UTC FL330. Piarco ACC did not coordinate this flight with Dakar ACC at position OPADO. Dakar ACC informed Piarco ACC of the miscoordination.	E	EOS	1	
8. PIARCO ACC (29-07-2017 AAL2295)	1	Piarco ACC coordinated AAL2295 with San Juan CERAP at position ILURI at FL380. The flight requested FL360 with Piarco ACC and was cleared to FL360. Piarco ACC did not re-coordinate AAL2295 with San Juan CERAP at FL360. San Juan CERAP called Piarco ACC to inform the Unit about the coordination error.	E	NS Combined	1	
9. PIARCO ACC (14-09-2017 RRR6771)	1	RRR6771 received an oceanic clearance from Piarco ACC without the aircraft being coordinated with New York ARTCC. New York ARTCC called Piarco ACC when the aircraft entered their airspace. Piarco ACC acknowledged the miscoordination.	E	EOS	1	
10. PIARCO ACC (11-11-2017 AEA176)	1	Piarco ACC coordinated AEA176 with New York ARTCC at position BUTUX at FL370. Piarco ACC then recleared AEA176 to FL390 and did not re-coordinate the flight with New York ARTCC. AEA176 entered New York's airspace at FL390.	E	EOS	1	
TOTALS	10				8	2

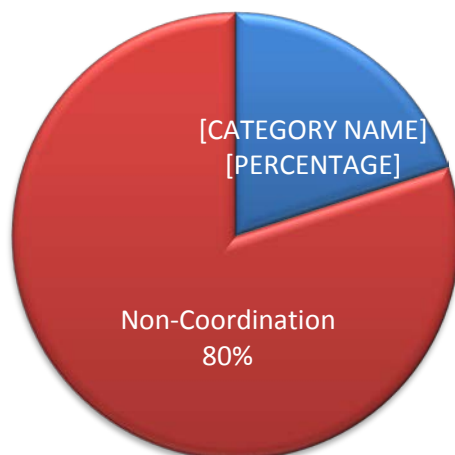
— — — — —

APPENDIX D**LHD Occurrences Reported by Piarco ACC for 2017**

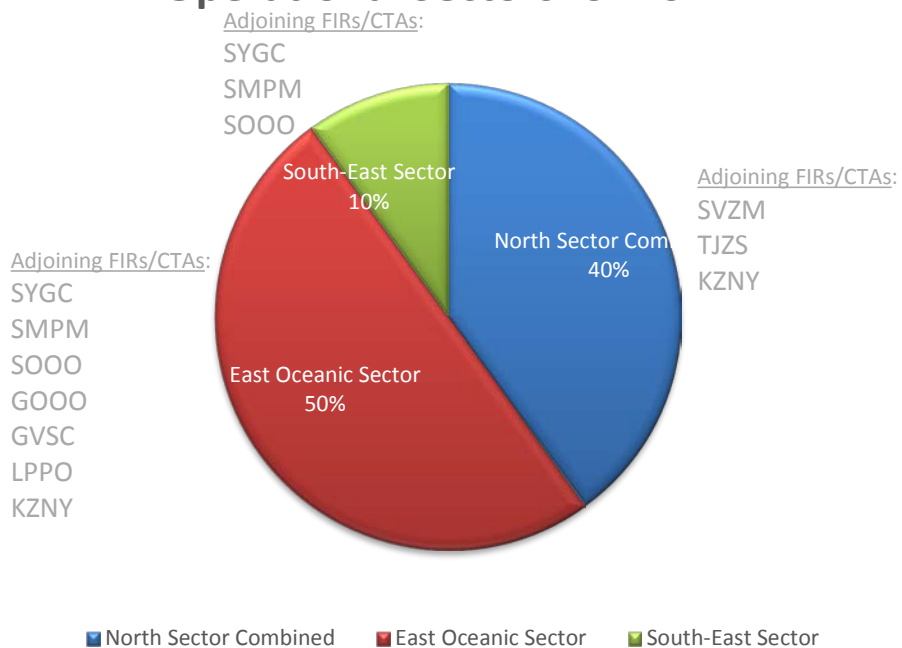
APPENDIX E

Assessment of LHD Occurrences Attributable to Piarco ACC for 2017

Type and percentage of LHD Occurrences for 2017 Attributable to Piarco ACC



Percentage of LHD Occurrences in Piarco's Operational Sectors for 2017



APPENDIX F



ANS HAZARD IDENTIFICATION FORM

TRINIDAD & TOBAGO CIVIL AVIATION AUTHORITY
AIR NAVIGATION SERVICES
ATS & ANS SAFETY DEPARTMENT

The information posted in this Form will be used for hazard identification and mitigation purposes only.

Reference No. (For Official Use Only): Enter Reference Number here.

Date of Occurrence/Observation: Click to enter date.

Date of Filing Report: Click to enter date.

Time of Occurrence/Observation (UTC): Click to enter time.

Time of Filing Report (UTC): Click to enter time.

HAZARD TAXONOMY

ENVIRONMENTAL (ENV)	TECHNICAL (TECH)	ORGANISATIONAL (ORG)	HUMAN (HUM)
<input type="checkbox"/> - Severe Weather <input type="checkbox"/> - Adverse Weather <input type="checkbox"/> - Geographical Events <input type="checkbox"/> - Natural Events <input type="checkbox"/> - Public Health	<input type="checkbox"/> - Aircraft <input type="checkbox"/> - Organisational Facilities <input type="checkbox"/> - External Facilities <input type="checkbox"/> - Physical Ergonomics <input type="checkbox"/> - Software <input type="checkbox"/> - Airspace	<input type="checkbox"/> - Economics <input type="checkbox"/> - Operational Policies/Procedures <input type="checkbox"/> - Materials/Equipment Acquisition <input type="checkbox"/> - Organisational Culture	<input type="checkbox"/> - Medical <input type="checkbox"/> - Physiological <input type="checkbox"/> - Cognitive <input type="checkbox"/> - Physical Limitation

OTHER (OTH) ☐: Briefly state here.

STATE HAZARD LOCATION

Click here to briefly state where hazard was observed or is located.

DESCRIPTION OF HAZARD

Click here to describe hazard.

SUGGESTED RECOMMENDATIONS (OPTIONAL)

Click here to enter suggested recommendations to mitigate/prevent recurrence.

STATE IF ANY OF THE OFFICIALS BELOW WERE INFORMED

Select those Officials informed about the identified hazard.

Official	Verbal	Written	Email	Time (UTC)	Official	Verbal	Written	Email	Time (UTC)
SUPERVISOR/OIC	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	UC AIM P&C	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC ACC & APP	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	UC AIRSPACE & FP DESIGN	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC AERODROMES	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	MANAGER AIM	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC ANS SAFETY	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	MANAGER CNS	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC P&E	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	MATS & ANS SAFETY	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC AIM	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	MANAGER ANS P&D	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
UC AIM QA	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	EMANS	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.
CNS ENGINEER	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.	DGCA	- <input type="checkbox"/>	- <input type="checkbox"/>	- <input type="checkbox"/>	.

Delivery Mode: Please complete the relevant sections of this Form, save in the **ANS Identification Hazard** folder and email to the **ANS Safety Group** Mailing List or deposit in the **ANS Safety Drop Box** by the end of your Shift or Workday.

I wish to remain anonymous ☐

I will like this Report to remain confidential ☐

Others may see this Report ☐

Name of Person Filing Report or ANS Operating Initials (Optional): Click here to enter name or initials.



ANS RISK ASSESSMENT & MITIGATION FORM

TRINIDAD & TOBAGO CIVIL AVIATION AUTHORITY
AIR NAVIGATION SERVICES
ATS & ANS SAFETY DEPARTMENT

THIS SECTION TO BE COMPLETED BY ANS SAFETY UNIT		
REFERENCE NO.: Enter Reference Number here.		CORRESPONDING REPORT NO/S.: Enter Reference Number here.
DATE OF RECEIVING REPORT: Click here to enter a date.		
RISK ASSESSMENT: Click here to enter (ICAO) Risk Assessment Index.		
SUGGESTED ACTION/S REQUIRED:		
Short-Term Click here to enter suggestions.	Medium-Term Click here to enter suggestions.	Long-Term Click here to enter suggestions.
Revised Risk Assessment Click here to enter (ICAO) Risk Assessment Index.	Revised Risk Assessment Click here to enter (ICAO) Risk Assessment Index.	Revised Risk Assessment Click here to enter (ICAO) Risk Assessment Index.
ACTION/S TO BE TAKEN BY:		
Short-Term Click here to enter Responsible Authority.	Medium-Term Click here to enter Responsible Authority.	Long-Term Click here to enter Responsible Authority.
RESOLUTION		
ACTUAL CORRECTIVE ACTION/S TAKEN:		
Short-Term Click here to enter actions taken.	Medium-Term Click here to enter actions taken.	Long-Term Click here to enter actions taken.
Date Resolved: Click here to enter a date.	Date Resolved: Click here to enter a date.	Date Resolved: Click here to enter a date.