LIST OF VALID AERONAUTICAL INFORMATION CIRCULARS – INTERNATIONAL

SERIES A

NUMBER	SUBJECT
05/02	Documents to be carried on board Civil Aircraft – **Trinidad and Tobago**
07/02	Policy for use of Global Positioning System (GPS) – **OECS**
09/02	Eastern Caribbean ACAS Policy and Implementation Schedule in the Piarco FIR - **OECS**
10/02	Requirements for use of GNSS in the Piarco FIR - **Trinidad and Tobago**
02/04	High Density Helicopter Operations - **Trinidad and Tobago**
06/04	General Procedures for Flight Crew License – **Trinidad and Tobago**
07/04	Validation of Foreign Licenses - **Trinidad and Tobago**
08/04	Trinidad and Tobago Civil Aviation Act and Regulations - Availability - **Trinidad and Tobago**
10/04	Foreign Operator requirement for Operations Specification - **Trinidad and Tobago**
06/05	Journey Permit Requirement - Non Scheduled/Charter Flights - **Trinidad and Tobago**
03/07	Database Interrogation Procedures – **Trinidad and Tobago**
06/07	New Format – TTCAA Airman Knowledge Examinations - **Trinidad and Tobago**
07/09	New License Format – **Trinidad and Tobago**
09/09	Foreign Operator – Operations Specifications – **Trinidad and Tobago**
03/10	Collection of Airport Charges – **Grenada**
06/10	Approved aircraft Handling Agencies - **Nevis**
01/16	FANS-1/A Operations in Piarco FIR – **Trinidad and Tobago**
06/16	Piarco FIR (TTZP) RVSM Implementation - **Trinidad and Tobago**

NUMBER	SUBJECT
08/16	Schedule of Fees for Air Transport Licences and Permits – **Trinidad and Tobago**
03/17	Aircraft Handling Procedures – **Antigua**
02/18	Advanced Passenger Information System – **Trinidad and Tobago**
03/18	Saint Lucia Air And Sea Ports Authority Policy On Private Aircraft Operations Into George F. L. Charles Airport – **Saint Lucia**
07/18	Airport Development Charge – **Saint Lucia**
09/18	Issuance of Permits to Conduct Commercial Flights into & out of Trinidad & Tobago - **Trinidad and Tobago**
14/19	Privately Owned NDB Installed - **Trinidad and Tobago**
02/21	Removal of notice of Flight Prohibition (Boeing 737 MAX 8 & Boeing 737 MAX 9) - **Trinidad and Tobago**
05/21	Implementation of the ICAO Global Reporting Format (GRF) - **Trinidad and Tobago**
03/22	User Preferred Routes in the Piarco FIR – **Trinidad and Tobago**
04/22	Alert Level of the La Soufriere Volcano – **St Vincent and the Grenadines**
05/22	**Checklist of Valid Aeronautical Information Circulars 2022 – Trinidad and Tobago**
06/22	**eAIP Eastern Caribbean Amendment Service 2022/2023/2024 – Trinidad and Tobago**

SERIES B (Local AIC)

NUMBER	SUBJECT
01/19	**Aeronautical Information Promulgation Advice Form – Trinidad and Tobago**

LIST LAST UPDATED 19th October 2022

PIARCO INTERNATIONAL NOTAM OFFICE

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Promulgation Advice Form

Introduction

The role and importance of aeronautical data and aeronautical information has changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), data link systems and satellite voice communications (SATVOICE).

Corrupt, erroneous, late or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation. Hence the receipt of data is an important first step in the aeronautical data process, which can result in the collection of data suitable for the publication of aeronautical products for use by Aeronautical Authorities, Aircraft Operators and other related personnel.

States are responsible for the origin of aeronautical data or information as stated in Chapter 2 of Annex 15 paragraph 2.1.5: "*Each state shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the Aeronautical Information Services.*"
Chapter 2, paragraph 2.2.2 also states that: '*The AIS shall receive, collate or assemble, edit, format, publish/store and distribute aeronautical data and aeronautical information concerning the entire territory of the State as well as those areas over the high seas for which the State is responsible for the provision of ATS. Aeronautical data and aeronautical information shall be provided as aeronautical information products.'*

Requesting Changes to the Eastern Caribbean Aeronautical Products

In harmony with this and in addition to formalized Letters of Agreement which satisfy the above mentioned requirements, Piarco Aeronautical Information Management (AIM) department has developed a Promulgation Advice Form (PAF) in PDF format as the standardised means to receive quality data and information.
The PDF Promulgation Advise Form is available on the TTCAA Website at: https://caa.gov.tt/

It is expected that the Eastern Caribbean States' AIS offices which have the CRONOS System will **not** use the PAF to request a NOTAM promulgation, **unless the CRONOS System is unserviceable.**

Feedback

The form is to be used for all requests for changes to the AIP, and issue of AIP Supplements and Aeronautical Information Circulars (AICs), and NOTAM when necessary (due to unserviceability of CRONOS System). Any difficulties experienced while using this form or suggestions for its improvement, can be reported to The Unit Chief AIM Publications at the following email address: aispublications@caa.gov.tt or phone number: 668-8222 Ext 2510.

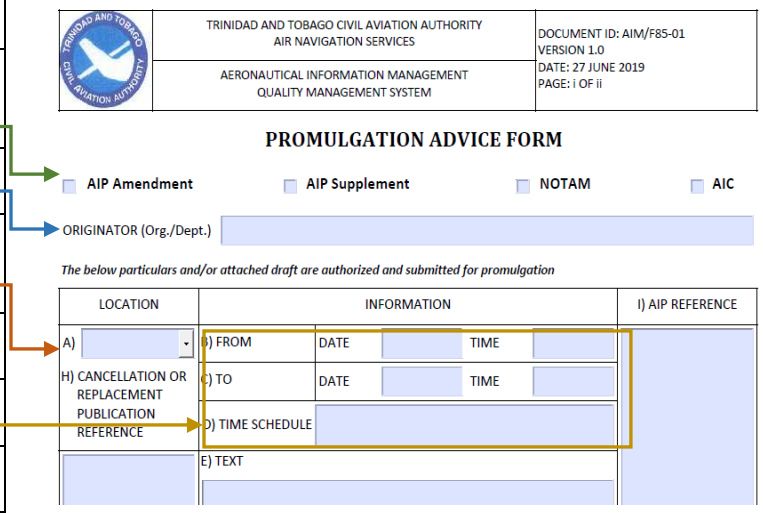
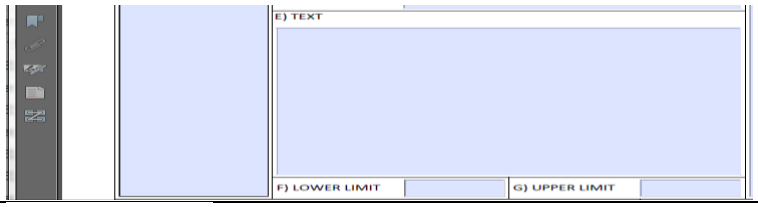
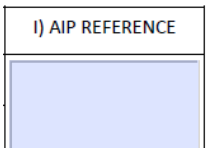
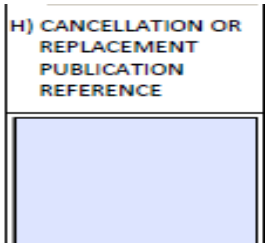
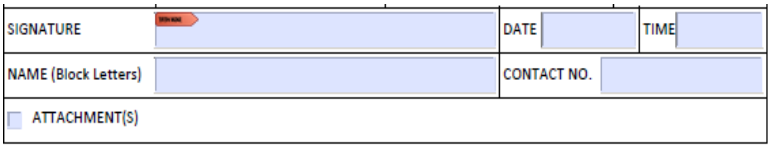
Please see attached Promulgation Advise Form (PAF) and Originator's Instructions for completion.

Revises AIC B 01/15

END

ATTACHMENT TO AIC B 01/19

PROMULGATION ADVICE FORM (PAF) ORIGINATOR INSTRUCTIONS

1.	Download and print form from the TTCAA website at https://caa.gov.tt/.	
2.	Choose 'AIP AMENDMENT', AIP SUPPLEMENT', 'AIC' or 'NOTAM'* by selecting the relevant check box.	
3.	Complete the 'ORIGINATOR' box by entering organization and/or department	
4.	Select the relevant Field 'A' – LOCATION by using the pull down menu or type directly into the text box	
5.	Fill in the 'B' field start date (yymmdd) and time (hhmm)	
6.	Fill in the 'C' field end date yymmdd and time (hhmm)	
7.	Fill in the D) field; time schedule (if necessary)	
8.	Fill in the 'E' field; text of the amendment, AIP supplement, AIC or NOTAM* If the text is lengthy, the information can be entered on the verso page of the form or attached as a separate document (eg Word doc).	
9.	If information is permanent, fill in the AIP section that is affected in the AIP reference field 'I'. (Except if the document is an AIC).	
10	If the intent is to use a NOTAM, AIP Supplement or AIC to replace or cancel another, or if the promulgation concerns an amendment which will result in the cancellation of another publication fill in the reference to the previous publication in the 'Cancellation or Replacement Publication Reference' field H).	
11	Fill in the originator's signature and date and time that the form is completed. The name of the originator is completed in block letters and a contact number is added.	
12	If a document is attached to the form, select the 'Attachments' check-box.	

To submit to Piarco Aeronautical Information Management Department, use one of these instruction:

I. Scan the completed and signed PAF and email as an attachment to: aispublications@caa.gov.tt (for AIP Amendment, AIP Supplement or AIC) or ais@caa.gov.tt (for NOTAM), or

II. Fax the completed and signed PAF to 868 669 1716.

END OF INSTRUCTION

	TRINIDAD AND TOBAGO CIVIL AVIATION AUTHORITY AIR NAVIGATION SERVICES	DOCUMENT ID: AIM/F85-01 VERSION 1.0 DATE: 27 JUNE 2019 PAGE: i OF ii
	AERONAUTICAL INFORMATION MANAGEMENT QUALITY MANAGEMENT SYSTEM	

PROMULGATION ADVICE FORM

☐ **AIP Amendment** ☐ **AIP Supplement** ☐ **NOTAM** ☐ **AIC**

ORIGINATOR (Org./Dept.)

The below particulars and/or attached draft are authorized and submitted for promulgation

LOCATION	INFORMATION		I) AIP REFERENCE
A)	B) FROM	DATE TIME	
H) CANCELLATION OR REPLACEMENT PUBLICATION REFERENCE	C) TO	DATE TIME	
	D) TIME SCHEDULE		
	E) TEXT		
	F) LOWER LIMIT	G) UPPER LIMIT	

SIGNATURE		DATE	TIME
NAME (Block Letters)		CONTACT NO.	
☐ ATTACHMENT(S)			

FOR AIM USE ONLY:

REMARKS		PUBLICATION NO./ID	
AUTHORIZED BY		DATE	TIME

E) TEXT (CONTINUED)

THIS FORM CAN ACCOMODATE PLAIN TEXT ONLY. IF USERS WISH TO INCLUDE GRAPHICS IN THIS DOCUMENT THEY MUST ATTACH THE INFORMATION AS A SEPARATE DOCUMENT. ENSURE THAT THE 'ATTACHMENT' CHECK BOX IS SELECTED AND THAT THE WORDS 'SEE ATTACHED' ARE ENTERED IN THE E) FIELD. TO SUBMIT, SEND THE DOCUMENT AS AN ATTACHMENT TO AN EMAIL ADDRESSED TO **aispublications@caa.gov.tt** OR **ais@caa.gov.tt**
USERS ALSO HAVE THE OPTION TO PRINT THE FORM AND FAX TO (868) 669-1716.

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eAIP Eastern Caribbean Amendment Service 2022/2023/2024

Introduction

The AIM Publications Unit of the Trinidad and Tobago Civil Aviation Authority (TTCAA) is charged with the production of Aeronautical Information Products; Aeronautical Information Publication (AIP), AIP Amendments, AIP Supplements (AIP SUP) and Aeronautical Information Circulars (AIC) for the following states: Anguilla, Antigua & Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, St. Christopher (St. Kitts)/Nevis, Saint Lucia, St. Vincent and the Grenadines and Trinidad & Tobago.

Updates

Amendments to the Eastern Caribbean AIP (ECAR AIP) are issued thrice yearly and are exclusively available on the TTCAA website (https://caa.gov.tt/). AIP SUPs, AICs and Trinidad and Tobago Charts are publicly available on the TTCAA website as they are issued and email notifications are sent to advise users of its availability.
In order to provide users with the latest amendment ahead of its effective date, a copy of the current amendment will be uploaded on the TTCAA website at least twenty-eight (28) days in advance of its effective date. The current and previous amendments are available under the AIP AMDT tab.
The complete and updated sections, subsections and Printable AIP will only become available on its effective date. This provides users with applicable data available for use at all times.
The Printable AIP makes printing of the complete sections possible as it contains updated and continuous sections of the AIP. The AIP SUP and AIC tabs link users to the latest and valid AIP SUP and AIC publications. Valid NOTAM are available on the TTCAA website and are updated daily, while the monthly NOTAM Summary is transmitted via email to all subscribers within the first five (5) days of each month.

The Piarco AIM Publications Unit has determined the following scheduled dates for AIP Amendments for 2022/2023 and the first dates for 2024, as guided by ICAO AIRAC effective dates published in Document 8126 - Aeronautical Information Services Manual, Part lll, Chapter 3:

SCHEDULE OF ECAR AIP AMENDMENTS 2022/2023/2024

Amdt no.	Latest Date for info to reach AIS	Latest Delivery Date for Distribution (AIRAC Date)	Publication Date	Latest Date to reach Users (AIRAC Date)	Effective date (AIRAC Date)
28	22 Sep 22	06 Oct 22	20 Oct 22	03 Nov 22	01 Dec 22
29	09 Feb 23	23 Feb 23	09 Mar 23	23 Mar 23	20 Apr 23
30	01 Jun 23	15 Jun 23	29 Jun 23	13 Jul 23	10 Aug 23
31	21 Sep 23	05 Oct 23	19 Oct 23	02 Nov 23	30 Nov 23
32	11 Jan 24	25 Jan 24	08 Feb 24	22 Feb 24	21 Mar 24

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Data Originators are urged to work in harmony with the specified dates so that amendments, in particular AIRAC amendments, can reach users at least 28 days in advance of the effective date. Guidance on the use of the AIRAC System can be located in the AIS Manual Doc 8126, while Annex 15 – Aeronautical Information Services describes the information which qualifies for publication according to the AIRAC System and the Standards and Recommended Practices for its use.

Errors/Omissions/Observations

In compilation of the updated aeronautical publications, care will be taken to ensure that the information contained within it is accurate and complete. Any errors and omissions which may nevertheless be detected, as well as any correspondence concerning the Amendment Service should be communicated via the TTCAA website using the AIM Contact page at https://caa.gov.tt/aim-contact-us-page/

Subscription Information:

Current subscribers and those who wish to subscribe to the Eastern Caribbean AIP service should visit our website at https://caa.gov.tt or use this URL: https://caa.gov.tt/eaip-acquisition-form/ and follow the instructions for annual AIP subscription.
On receipt of the acquisition record by the TTCAA, purchasing subscribers will be provided with a proforma invoice.

Current complimentary subscribers wishing to continue receiving the ECAR AIP are also requested to complete and submit the online acquisition form annually so that records are kept current.

Annual subscription prices for the Aeronautical Information Publications relating to the AIP Eastern Caribbean are as follows:

AIP Eastern Caribbean (one-year subscription) 100.00USD
Note: All bank transfer charges must be handled by the customer. The full invoice amount must be received.

Subscribers are to note the following:

I. Subscribers paying by wire transfer, should furnish a copy of the remittance advice to the TTCAA clearly stating the purpose for the payment.
II. ProForma Invoices will be issued on behalf of the Director General of Civil Aviation, invoices and receipts will be issued when payment is received. Actual invoices may be issued upon request.
III. Cheques are to be made payable to: **Trinidad & Tobago Civil Aviation Authority.**
IV. Online payments are not possible at this time.

Replaces AIC A 02/22.

END

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CHECKLIST OF VALID AERONAUTICAL INFORMATION CIRCULARS 2022

Valid AICs are available on the Trinidad and Tobago Civil Aviation Authority (TTCAA) website as well as published in NOTAM Checklists and monthly NOTAM Summaries.

The AIM Publications Unit will no longer issue Checklist of Valid AICs as an AIC.

Cancels AIC A 01/22

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ARGYLE – ST VINCENT AND THE GRENADINES

Alert Level of the La Soufriere Volcano

The alert level for the La Soufriere Volcano (131948N 0611048W) in St Vincent is **green**.

Green alert means that Seismic and Fumarolic (Steam Venting) activities at the Soufriere Volcano are at or below the historic levels.

Any changes to the current level will be updated accordingly.

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03/22
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REPUBLIC OF TRINIDAD AND TOBAGO

USER PREFERRED ROUTES IN THE PIARCO FIR

1. Purpose

1.1. The purpose of this Aeronautical Information Circular (AIC) is to disseminate to all personnel involved in air operations a series of user-preferred routes that may be filed in their flight plan and used by Air Traffic Control in the clearance.

1.2. By definition, a User Preferred Route (UPR) is a unique flight path that aircraft operators can flight plan and fly instead of following the conventional, predetermined aviation routes published by air navigation service providers.

1.3. The personnel responsible for the preparation and presentation of flight plans (Aircraft Operators or Pilots) are responsible for complying with the provisions of this AIC.

2. Introduction

2.1. The ICAO Global Air Navigation Plan (GANP) and Aviation System Block Upgrades (ASBU) methodology provide a flexible, global approach for all aviation stakeholders to advance their Air Navigation capacities based on their specific operational requirements. ASBU Free Route Operations FRTO Block 0 Element 1 (B0/1, Direct routing (DCT) states that DCTs are established at national and regional levels and can be made available for flight planning within the published conditions of use. DCTs should be considered an early iteration of the Free Route Airspace (FRA) concept of operation that allow airspace users to optimize flight and fuel planning.

2.2. While the implementation of the broader concept of DCT routing is still being developed, it is operationally important to take advantage of opportunities to implement user preferred routes for filing flight plans, which consist of the most optimized routes possible according to the technical/operational capabilities of the involved ANSPs.

2.3. ICAO NACC Airspace Optimization Task Force, ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA have identified opportunities to achieve fuel savings and reduce CO2 emissions by working collaboratively to help optimize a flight's end-to-end routing. In today's environment, after the flight plan has been filed and the aircraft is en-route, pilots will often receive "direct" routings from air traffic controllers. While this can help shorten the route, the aircraft has already been fuelled for the longer route and must still carry that extra fuel to destination.

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03/22
08 SEP 22

2.4. By working with the Civil Aviation Authorities (CAA), Air Navigation Service Providers (ANSPs) and airlines, the ICAO NACC and SAM Regional Offices, with the support of CANSO (CADENA) and IATA, it has been possible to facilitate the development of optimized city- pair user preferred routes that can be used by dispatchers for filing flight plans so that fuel savings and CO2 reductions can be achieved.

2.5. Section 4 below contains routes that may be used by aircraft operators in the preparation of optimized Instrument Flight Rules (IFR) Flight Plans (FPL) between origin and destination airports.

2.6. As additional user preferred routes opportunities are identified and developed by ICAO NACC Airspace Optimization Task Force, the ICAO SAM Airspace Study and Implementation Group (GESEA), CANSO (CADENA), and IATA, and approved for use by the CAAs and ANSPs, this AIC will be updated and published in accordance with the applicable Aeronautical Information Regulation And Control (AIRAC) dates.

3. Aircraft Capabilities

In order to file and fly the optimized routes, the following minimum aircraft capabilities are required:

		Flight Plan Entries	
Communication Requirements	Performance-Based Navigation (PBN) Requirements	PBN in field 18 PBN/	
Voice comm – Very High Frequency (VHF), Controller-Pilot Data Link Communication (CPDLC) as required, to maintain contact over the entire route to be flown	Area navigation (RNAV-5)	B1/B2	

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08 SEP 22

4. Optimized Routes – End to End

For overall situational awareness, the optimized routes in the table below are predefined routes from origin to destination and have been coordinated, reviewed, and approved by all of the ANSPs along the route.

NOTE: Coordination of the following routes apply to Brazil, Guyana, Trinidad and Tobago and United States.

Optimized Routes	Predefined Routes - Origin to Destination
TTPP - KMIA	TTPP DCT ANADA DCT MUNOZ DCT HARBG Y330 FODED DCT MADIZ DCT FOXID DCT FLIPR FLIPR7 KMIA
KMIA - TTPP	KMIA SKIPS2 SKIPS Y290 HAGIT Y421 HARBG L452 ANADA UG449 PERGA ITRAK NAPKO LEXOR TALUS TTPP
KATL - SBGR	KATL VRSTY2 MCN DCT YANTI Q89 MANLE Y185 RENAH Y355 FIPEK Y294 GESSO L467 ANADA DCT KORTO DCT SUMVA SBGR
SBGR - KATL	SBGR SUMVA DCT KORTO DCT ANADA L452 HARBG Y421 HAGIT Y306 VENDS Y185 MANLE Q89 SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL

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5. Optimized Route Portion in the Piarco FIR

As pertains to the portion of the routes in the Piarco FIR, the optimized routes in the table below have been coordinated, reviewed, and approved by TTCAA.

Optimized Routes	Optimized Route Portions
TTPP - KMIA	TTPP DCT ANADA
KMIA - TTPP	ANADA UG449 PERGA ITRAK NAPKO LEXOR TALUS TTPP
KATL - SBGR	ANADA DCT KORTO
SBGR - KATL	KORTO DCT ANADA

6. Contact Information

If you require assistance with this AIC or need to coordinate a special request related to these optimized routes, please contact Mr. Ernie Snyder (ESnyder@icao.int), Midori Tanino (midori.tanino@faa.gov), and/or Joe Hof (jhof@cghtech.com).

END

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REPUBLIC OF TRINIDAD AND TOBAGO

IMPLEMENTATION OF THE ICAO GLOBAL REPORTING FORMAT (GRF)

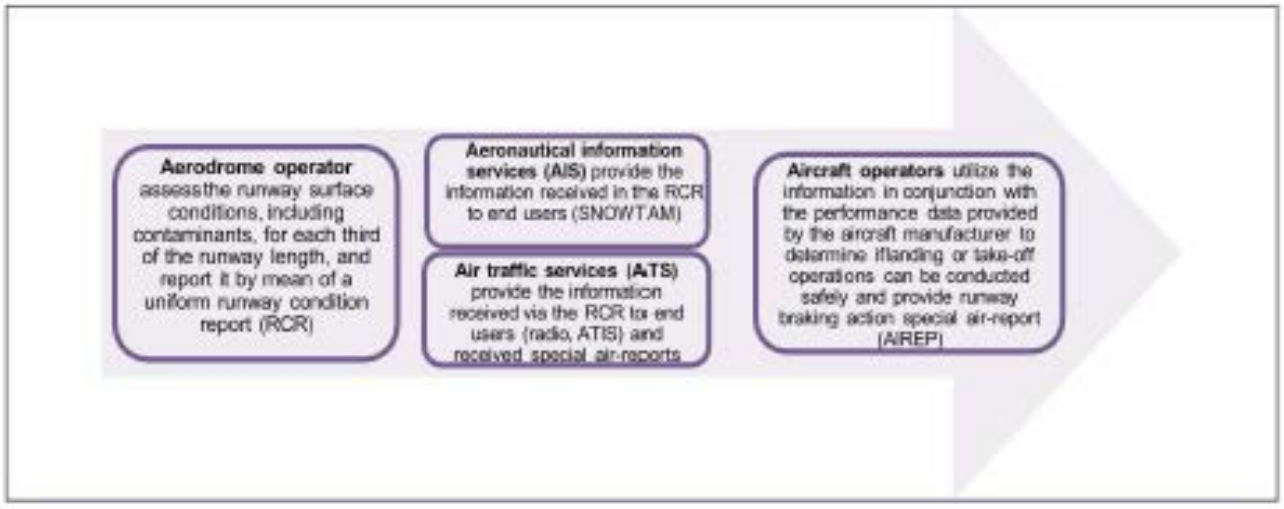
1.0 Introduction

1.1 The new ICAO methodology for assessing and reporting runway surface conditions, commonly known as the Global Reporting Format (GRF), enables the harmonized assessment and reporting of runway surface conditions and a correspondingly improved flight crew assessment of take-off and landing performance.

The GRF, applicable on **4 November 2021**, is described through amendment 13-B to Annex 14 — Aerodromes, Volume I —Aerodrome Design and Operations; Annex 3 — Meteorological Service for International Air Navigation; Annex 6 — Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes and Part II — International General Aviation — Aeroplanes; Annex 8 — Airworthiness of Aircraft; Annex 15 — Aeronautical Information Services and Procedures for Air Navigation Services (PANS) — Aerodromes (PANS-Aerodromes, Doc 9981), Aeronautical Information Management (PANS-AIM, Doc 10066) and Air Traffic Management (PANS-ATM, Doc 4444).

In addition, supporting material is available in ICAO Circular 355, Assessment, Measurement and Reporting of Runway Surface Conditions and in the Doc 10064 Aeroplane Performance Manual.

1.2 **Flow of Information**



2.0 Collection and Submission of Information

2.1 The Airports Authority of Trinidad and Tobago (AATT) is responsible for assessing the condition of the runway for each third of the runway and determining whether the conditions are such that require a report to be submitted to the TTCAA AIM Department or Air Traffic Services (ATS) for processing and dissemination.
The AATT is required to report via RCR to the TTCAA AIM Department or ATS, as applicable, on matters of operational significance affecting aircraft and aerodrome operations on the movement area, particularly relating to water. Significant changes in accordance with PANS-Aerodromes (Doc 9981) are also to be provided by the AATT until the runway conditions are no longer reportable by the TTCAA AIM Department and/or ATS. The condition of the movement area shall be reported by the submission of a Runway Condition Report (RCR), along with a completed Promulgation Advice Form to the TTCAA AIM Department.

2.2 The AIS Departments of the Eastern Caribbean States, Anguilla, and the British Virgin Islands are required to coordinate with their respective aerodrome operators regarding the provision of RCR, including format, content and method of provision.

2.3 The Eastern Caribbean States, Anguilla and British Virgin Islands are responsible for submitting completed SNOWTAM Format Forms and Promulgation Advice Forms (PAF) to the TTCAA AIM Department for processing and dissemination.

2.4 The primary means of submission of the above documents shall be via email and the secondary means shall be via fax. The SNOWTAM Format Form is available on the TTCAA website at caa.gov.tt or by using the following URL: PDF SNOWTAM Format Form

Note: Details of the Global Reporting Format is contained in the Procedures for Air Navigation Services (PANS) — Aerodromes (PANS-Aerodromes, Doc 9981) and ICAO Circular 355 (Assessment, Measurement and Reporting of Runway Surface Conditions) and the Procedures for Air Navigation Services (PANS) - Aeronautical Information Management (PANS-AIM, ICAO Document 10066, Amendment No. 2).

3.0 Processing and dissemination of information

3.1 The TTCAA AIM Department processes and disseminates the information received from the AATT and the ECAR States, Anguilla and the B.V.I. to end users via SNOWTAM in accordance with the GRF.

3.2 The TTCAA AIM Department shall carry out quality checks at different stages, including before and after issuance of the SNOWTAM to ensure that the SNOWTAM reflects the same information as was originally received from data originators.

3.3 In the event that the TTCAA AIM Department and/or ATS needs clarification of the information received, necessary coordination shall be made with the relevant data originators. The accuracy of the data received is the responsibility of relevant data originators as TTCAA AIM Department and/or ATS is unable to verify the accuracy of the data.

Note: Details of the new SNOWTAM format is contained in the Procedures for Air Navigation Services—Aeronautical Information Management (PANS-AIM, ICAO Document 10066, Amendment No. 2).

3.4 Air Traffic Services (ATS) processes and disseminates the information received via the RCR and special air-reports to end users via radio and ATIS.

3.5 Using the information

Aircraft operators utilize the information in conjunction with the performance data provided by the aircraft manufacturer to determine if landing or take-off operations can be conducted safely. Additionally, operators provide runway reports on braking action to ATS.

4.0 The Runway Condition Report (RCR)

4.1 **General**

The RCR details the condition of the movement area and comprises two sections as follows:

- Aeroplane performance calculation section
- Situational awareness section

The RCR consists of items that are either mandatory, conditional or optional. The RCR contains the RWYCC (Runway Condition Code) and information which describes the runway surface condition: type of contamination, depth, coverage for each third of the runway, etc. and other relevant information. This code is derived from the Runway Condition Assessment Matrix (RCAM).
RCR provided to the TTCAA AIM Department by the AATT shall contain all mandatory information items (items A, B, C, D and G) as well as optional and conditional items, as applicable.

4.2 **Contents**

The RCR to be submitted by AATT shall contain information on the following items, as applicable.

- Aeroplane performance calculation section:
  - ICAO location indicator of the aerodrome;
  - Date and time of the assessment;
  - Lower runway designation number;
  - Runway Condition Code (RWYCC) for each runway third;
  - Percent coverage contaminant for each runway third;
  - Depth of loose contaminant for each runway third;

- Condition description for each runway third, and
- Width of runway to which the RWYCC apply if less than the published width;

o Situational awareness section:
- Reduced runway length;
- Loose sand on the runway;
- Chemical treatment on the runway;
- Taxiway conditions;
- Apron conditions,
- Measured Friction Coefficient, and
- Plain language remarks.

4.3 The Runway Condition Code (RWYCC)

The RWYCC is a code number from 0 to 6, which indicates information on contamination, aeroplane deceleration performance and lateral control on the runway. The RWYCC is derived via the Runway Condition Assessment Matrix (RCAM), based on the assessment and observation by the AATT and reports of flights crews, as shown in **Appendix A**.

5.0 SNOWTAM

The runway surface condition will be promulgated via SNOWTAM by the TTCAA AIM Department using the data received in the RCR from the AATT or the SNOWTAM Format Form received from the ECAR States, Anguilla and the B.V.I.

5.1 Validity

The maximum validity period of SNOWTAM is eight (8) hours.

5.2 Format

SNOWTAM are issued in accordance with the SNOWTAM Format, as shown in **Appendix B.**
Inclusion of the various items is either Mandatory (M), Conditional (C) or Optional (O), as indicated in the SNOWTAM Format Form.

Note: The letters used to indicate the SNOWTAM items are only used for reference purposes and will not be included in the SNOWTAM messages.

5.3 Content

Guidance on the contents of the SNOWTAM Format is provided in the PANS-AIM (*Amendment No. 2*), Appendix 4.

6.0 Supplementary Information

6.1 SNOWTAM is automatically transmitted via AFTN/AMHS to the same distribution list of recipients that receive NOTAM from the TTCAA AIM Department plus other approved addresses.

6.2 Requests to amend the AFTN/AMHS address distribution list used for NOTAM/SNOWTAM shall be directed to the TTCAA AIM Department's NOTAM Office (NOF) using the email address: ais@caa.gov.tt

7.0 Examples

GG TTZPZQZX TTPPZTZX TTPPZPZX TLPLZTZX TLPCZTZX TFFFZPZX
140120 TTPPYNYX
SWTL0144 TLPL 02140110
(SNOWTAM 0144
TLPL
02140110 10 5/5/2 100/100/100 NR/NR/04 WET/WET/STANDING WATER)

GG TTZPZQZX TTPPZTZX TTPPZPZX TVSVZTZX TBPBZPZX
170140 TTPPYNYX
SWTT0150 TTPP 02170130
(SNOWTAM 0150
TTPP
02170130 10 6/2/6 NR/50/NR NR/04/NR DRY/STANDING WATER/DRY 20
RWY 10 LOOSE SAND. RWY 10 CHEMICALLY TREATED. TWY B POOR. TWY C POOR. APRON NORTH POOR)

Tele: 1 868 669-4128
1 868 668-8222 ext. 2510, 2564
FAX: 1 868 669 1716
AFTN: TTPPYNYX
Email: aispublications@caa.gov.tt

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P.O. BOX 2163, NATIONAL MAIL CENTRE, PIARCO
REPUBLIC OF TRINIDAD AND TOBAGO

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05/21
03 Nov 21

Appendix A

Runway Condition Assessment Matrix (RCAM)

Assessment criteria		Downgrade assessment criteria	
RWYCC	**Runway surface description**	**Aircraft deceleration or directional control observation**	**Special air-report of runway braking action**
6	Dry	-	-
5	Frost Wet (runway surface is covered by any visible dampness or water with depth ≤ 3 MM) Slush (depth ≤ 3 MM) Dry snow (depth ≤ 3 MM) Wet snow (depth ≤ 3MM	Braking deceleration is normal for the wheel braking effort applied and directional control is normal	GOOD
4	Specially prepared winter runway Compacted snow and TEMP ≤ -15°C	Braking deceleration or directional control is between 'good' and	GOOD to MEDIUM
3	Slippery wet Dry snow or wet snow (any depth) on top of compacted snow Dry snow (depth > 3MM) Wet snow (depth > 3 MM) Compacted snow and TEMP > -15°C	Braking deceleration is noticeably reduced for the wheel braking effort applied or directional control is noticeably reduced.	MEDIUM
2	Standing water (depth > 3 MM) Slush (depth > 3 MM)	Braking deceleration or directional control is between 'medium' and	MEDIUM to POOR
1	Ice	Braking deceleration is significantly reduced for the wheel braking effort applied or directional control is significantly reduced.	POOR
0	Wet ice Water on top of compacted snow Dry snow or wet snow on top of ice	Braking deceleration is minimal to non-existent for the wheel braking effort applied or directional control is uncertain.	LESS THAN POOR

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APPENDIX B

SNOWTAM FORMAT

(COM heading)	(Priority indicator	(Addresses)			<≡
	(Date and time of filing)	(Originator's indicator)			<≡
(Abbreviated heading)	(SWAA* SERIAL NUMBER) S W * *	(LOCATION INDICATORS)	DATE-TIME OF ASSESSMENT	(OPTIONAL GROUP)	<≡(
SNOWTAM →	(Serial number) <≡				
Aeroplane performance calculation section					
(AERODROME LOCATION INDICATORS)		M	A)	<≡	
(DATE/TIME OF ASSESSMENT *(Time of completion of assessment in UTC)*)		M	B)	→	
(LOWER RUNWAY DESIGNATION NUMBER)		M	C)	→	
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)		M	D)	// →	
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)		C	E)	// →	
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)		C	F)	// →	
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number) COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE		M	G)	// →	
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)		O	H)	<≡≡	
Situational awareness section					
(REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))		O	I)	→	
(DRIFTING SNOW ON THE RUNWAY)		O	J)	→	
(LOOSE SAND ON THE RUNWAY)		O	K)	→	
(CHEMICAL TREATMENT ON RUNWAY)		O	L)	→	
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))		O	M)	→	
(SNOWBANKS ON A TAXIWAY)		O	N)	→	
(SNOWBANKS ADJACENT TO THE RUNWAY)		O	O)	→	
(TAXIWAY CONDITIONS)		O	P)	→	
(APRON CONDITIONS)		O	R)	→	
(MEASURED FRICTION COEFFICIENT)		O	S)	→	
(PLAIN-LANGUAGE REMARKS)		O	T)	) <<≡	

NOTES:
1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier.
2. Information on other runways, repeat from B to H.
3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable, when reported.
4. Words in brackets () not to be transmitted.
5. For letters A) to T), refer to the *Instructions for the completion of the SNOWTAM format, paragraph 1, item b).*

SIGNATURE OF ORIGINATOR *(not for transmission)*

INTENTIONALLY LEFT BLANK

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02/21

15 JAN 21

REPUBLIC OF TRINIDAD AND TOBAGO

REMOVAL OF NOTICE OF FLIGHT PROHIBITION

To all operators of Boeing 737 MAX 8 and Boeing 737 MAX 9 of all nationalities

Whereas on the 13th day of January 2021, the Director General of Civil Aviation, being duly authorized and pursuant to Section 40. (3) of the Civil Aviation Act No. 11 of 2001 has found that the previously identified safety of flight issues listed in the NOTICE OF FLIGHT PROHIBITION dated 13th of March 2019 for that said aircraft type, have been satisfactorily resolved.

Given the foregoing, you are HEREBY NOTIFIED that the PROHIBITION FROM USE of the said aircraft in civil aviation operations in or over Trinidad and Tobago is hereby removed.

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REPUBLIC OF TRINIDAD AND TOBAGO

Privately Owned NDB Installed

A privately owned NDB has been installed at the Hibiscus Platform at approximately POS Radial 350/43 DME, with specifications as follows:-

Location: 110752.62N 0613932.32W

Identification: BGH

Frequency: 250KHz

Power Output: 100 Watts

Replaces AIC A13/19

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REPUBLIC OF TRINIDAD AND TOBAGO

Issuance of Permits to Conduct Commercial Flights into & out of Trinidad & Tobago

Trinidad and Tobago will issue permits for passenger flights to air operators registered in States where a bilateral/multilateral or other Air Services Agreement exists with Trinidad and Tobago, in accordance with reciprocal route and traffic rights stated therein.

In the absence of a bilateral/multilateral or other Air Services Agreement between Trinidad and Tobago and another State, the Trinidad and Tobago Civil Aviation Authority (TTCAA) will only grant authorization to air operators of either State to perform direct flights solely between the two territories. This means that traffic rights granted will not exceed the Fourth Freedom of the Air. Therefore, the TTCAA will only approve an application submitted by an air operator from a State where no Air Services Agreements exists, to be granted authorization to:

- Transport passengers from the applicant's State of registry destined to Trinidad and Tobago (3rd Freedom)
- Transport passengers from Trinidad and Tobago destined to the applicant's State of registry (4th Freedom)

These restrictions are not applicable to the following:

- Medical Flights (Medivacs)
- Ad hoc cargo operations

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SAINT LUCIA

AIRPORT DEVELOPMENT CHARGE (ADC) FOR SAINT LUCIA

The Saint Lucia Air and Sea Ports Authority (SLASPA) wishes to state that the Airport Development Act of December 27th 2017 has introduced the Airport Development Charge which is applicable to all passengers traveling through Saint Lucia's Airports effective January 01st, 2018.

Method of payment:

The Airport Development Charge (ADC) shall be collected by the International Air Transport Association (IATA) for Carriers/Operators which are party to such arrangement/agreements. Other Carriers/Operators shall make payments of the ADC directly to the Saint Lucia Air and Sea Ports Authority (SLASPA).

SLASPA as the administering authority of the charge, and for whose benefit the charge was developed and implemented, can administratively exclude certain categories of persons from the application of the Act establishing the charge. In consideration of certain factors the Authority shall exclude various categories of passengers from the application of the Act under specific conditions as follows:

(a) the Governor General, his or her spouse and children under the age of eighteen years when travelling with him or her;

(b) a member of Parliament, his or her spouse and the children under the age of eighteen years when travelling with him or her;

(c) a Judge of the Eastern Caribbean Supreme Court;

(d) a person signified by a Minister or a Permanent Secretary of a Ministry, to be travelling on business of the Government;

(e) a person signified by a Minister to be guest of the Government

(f) an official representative of the government of any country, his or her spouse and children under the age of eighteen years when travelling with him or her;

(g) a representative of the United Nations Organization or other international or regional organization accorded diplomatic privileges in Saint Lucia or a person sent on a mission on behalf of an organization, their spouses and their children under the age of eighteen years;

(h) a member of the protective services of Saint Lucia or a friendly country, when travelling on official duty;

(i) a person leaving Saint Lucia on the same day of arrival;

(j) a member of the operating crew of an aircraft;

(k) a minister of a religious denomination which has a congregation in Saint Lucia and registered with the Ministry responsible for ecclesiastical affairs;

(l) a student who is a Saint Lucian national, citizen or resident proceeding abroad to an educational institution to pursue a course of study approved by the Ministry responsible for education;

(m) a person repatriated, or deported from Saint Lucia by the Government, or under any law in force;

(n) a person below the age of twelve years;

(o) a person who is a Saint Lucian national, citizen or resident proceeding abroad to represent Saint Lucia at –

(i) a sporting event approved by the Ministry responsible for sports,
(ii) a youth event approved by the Ministry responsible for Youth,
(iii) a cultural event approved by the Ministry responsible for Culture.

Replaces AIC 04/18

END

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SAINT LUCIA

SAINT LUCIA AIR AND SEA PORTS AUTHORITY POLICY ON PRIVATE AIRCRAFT OPERATIONS INTO GEORGE F. L. CHARLES AIRPORT

In observance of technical advice received from the International Civil Aviation Organization (ICAO), the Saint Lucia Air and Sea Ports Authority (SLASPA) has established the following conditions upon which certain private flight operations above ICAO Classification Code 2 may be allowed to operate at George F.L. Charles Airport, Castries, Saint Lucia.

Private flight operations will mean flights which are non-commercial (*not engaged in the scheduled or non-scheduled operations of offering seats or space onboard an aircraft to individual passengers or groups of passengers, for hir*e) and are for the private use of the owner, lessee, staff, business associates and guests.

The conditions are:

1. The proposed operator must agree to hold harmless or waive any rights to liability that SLASPA and the Government of St. Lucia may be subject to, arising out of the use of George F.L. Charles Airport. The required hold harmless agreement shall be completed as prescribed on the attached Indemnity Form signed by an appropriate authorized officer of the Operator and shall be submitted along with details of the aircraft, which must be received by the office of the George F.L. Charles Airport Manager no later than twenty four (24) hours prior to the proposed operation.

   The office of the Airport Manager will respond to the request as soon as practicable.

   The Saint Lucia Air and Sea Ports Authority reserves the right to deny any application, if in its opinion, it is necessary to do so.

2. The private aircraft's ICAO Classification Code must not be higher than Code 3C, with wingspan not greater than 28.5 meters (93.50 feet).

3. The operator will be fully responsible for ensuring that all aircraft operational requirements are met, that the aircraft operational weights and performances are adequate for the local conditions and the George F.L. Charles Airport (TLPC) and for the available landing and takeoff distances.

   The aircraft must be capable of executing takeoff using either runway, direction 09/27.

4. The type and ICAO Classification Code of the aircraft must be specified in the information received by the officer of the Airport Manager on the proposed flight operations

5. The flight shall be operated during the hours of daylight, except if otherwise authorized by the appropriate authority. The flight shall be operated under conditions of no rain, with the visibility no less than six (6) kilometers.

   For the purpose of this policy, daylight means the period of sunrise to sunset.

6. Parking of aircraft will be accommodated at the George F.L. Charles Airport subject to available space on the ramp and expected traffic. In circumstances when necessary, the aircraft shall be directed to proceed to Hewanorra Airport for parking.

   All over-nighting aircraft shall be directed to park at the Hewanorra International Airport.

Replaces AIC 03/12

END

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REPUBLIC OF TRINIDAD & TOBAGO

ADVANCED PASSENGER INFORMATION SYSTEM

Introduction

The Immigration (Advance Passenger Information) Act No.9 of 2008, requires **all** aircraft bound for Trinidad & Tobago to transmit Advanced Passenger Information for all passengers and crew members to the Chief Immigration Officer of Trinidad & Tobago. Advance Passenger Information (API) is data in respect of each passenger and crew member on board. This information must be transmitted as stated above prior to the departure of the aircraft from the last port of call for Trinidad & Tobago. *Please be advised that the current API legislation is pending revision and the provisions contained therein will be modified.*

Mandatory Requirement

Participation by all inbound aircraft is **mandatory** and can only be waived by Order of the Minister where the aircraft is a military aircraft or on official state business. Intentional or reckless failure to transmit, or incomplete transmission of, the API is deemed a summary offence. A captain of an aircraft found guilty of this offence is liable on summary conviction, to a fine of six hundred thousand dollars (600,000.00TTD).

Data Elements Required

The table below contains the specific data required for each flight.

Flight Data	***Passenger/Crew data***
Flight identification	Official travel document type
Scheduled departure date	Official travel document number
Scheduled departure time	Issuing State or organization of travel document
Scheduled arrival date	Expiration date of travel document
Scheduled arrival time	Last name
Last departure point/port	First name
Arrival point/port	Middle name
Next arrival point/port within the country/domestic space	Nationality
Number of passengers on board	Date of birth
Number of crew on board	Gender
	Place of birth
Reporting Party Data	Status (passenger, crew, in-transit)
Name	Original departure point/port
Telephone number	Clearance point/port
Fax number	Destination point/port

Collection/Collation Agent

The Joint Regional Communications Centre (JRCC) has been appointed by the Government of Trinidad & Tobago as the agent/representative to collect and process this information on their behalf.

In order to facilitate the provision of the required information to the JRCC, the automated CARICOM Advanced Passenger Information System (APIS) was established. This system is a web-based application that provides a means of uploading and transmitting API. Full details on APIS requirements and downloadable forms may be obtained from the JRCC's website www.caricomeapis.org

The methods and formats of submission are:
(1) Downloadable Microsoft Excel Spreadsheet.
(2) Online portal form accessed at www.caricomeapis.org.
(3) Upload area for UN/Edifact Files.

JRCC Contact Details

Joint Regional Communications Centre
P.O. Box 1084
Bridgetown Barbados
BB11000

Tel: (246) 538 7900
Fax: (246) 228-4040
Email: aviation.compliance@impacsjrcc.org
Website: https://www.caricomimpacs.org/

Hours of Operation – H24

END

Replaces AIC 03/11

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V.C. BIRD – ANTIGUA

AIRCRAFT HANDLING PROCEDURES

Effective from 24th January 2017 to PERM

Effective immediately, ALL handling agents are asked to confirm in WRITING (via Email or Fax), ALL flight operations including call-sign and registration of the aircraft handled by your company prior to departure to avoid delays. This is in an effort to reduce errors during the billing period.

Please send emails to the V. C. Bird Aeronautical Information Service at ais@ab.gov.ag or fax to 1 (268) 562-3040.

END

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08/16

08 DEC 16

REPUBLIC OF TRINIDAD AND TOBAGO

SCHEDULE OF FEES FOR AIR TRANSPORT LICENCES AND PERMITS

Introduction

The Trinidad and Tobago Civil Aviation Authority (TTCAA) has the responsibility for the orderly development, expansion and regulation of the aviation industry in Trinidad and Tobago on a sound economic basis. The government of Trinidad and Tobago is a member of ICAO and seeks to adhere to its annexes. In accordance with the Trinidad and Tobago Civil Aviation Act, 2001, Section 33, the TTCAA with the approval of the Minister can make regulations for this adherence. These regulations are known as the Trinidad and Tobago Civil Aviation Regulations (TTCARs) and nineteen (19) such regulations have been legislated. The **new** Civil Aviation [(No17) Economic] Regulations, 2016 took effect on 16th November, 2016 and replaced Civil Aviation [(No17) Economic] Regulations, 2011.

The Department of Air Transport Economic Regulations (DATER) of the Trinidad and Tobago Civil Aviation Authority is charged with the responsibility of issuing approvals for commercial air services (air transport licences and permits) in accordance with the new Civil Aviation [(No17) Economic] Regulations, 2016. See below link for further information.

http://www.news.gov.tt/archive/E-Gazette/Gazette%202016/Legal%20Notice/Legal%20Notice%20No.%20182%20of%202016.pdf

The DATER issues the following types of air transport documents:

Licences-
International Commercial Air Transport Licence
Domestic Commercial Air Transport Licence

Permits-
International Commercial Air Transport Permit
Domestic Commercial Air Transport Permit
Commercial Aerial Work Permit

The fees associated with these air transport documents took effect on the 16th November 2016 and are presented hereunder.

SCHEDULE 8

[Regulation 19(1)]

SCHEDULE OF FEES

FEES FOR LICENCES TO OPERATE SCHEDULED SERVICES

COMMERCIAL AIR OPERATOR LICENCES

Applicants for a Commercial Air Operator Licence must pay the applicable fee before the licence is issued.

The applicable fee will be:

I) **For passenger services** – the product of the seating capacity (SC) of the largest aircraft on the licence and the unit rate (UR) in effect.

FEE = SC * UR

II) **For cargo services** – the product of the Maximum Takeoff Weight (MTOW in metric tons) of the largest aircraft on the licence and one and a half times the unit rate (UR) in effect.

FEE = (MTOW * UR) * 1.5

The rate in effect = $192.00

**A minimum fee of $10,000.00 will be charged for a Commercial Air Operator Licence.

** A maximum fee of $50,000.00 will be charged for a Commercial Air Operator Licence.

PROVISIONAL LICENCES

Provisional Licences will have a fee attached to it which is equivalent to 50% of the calculated fee for the Commercial Air Operator Licence for which the applicant has applied.

**A minimum fee of $5,000.00 will be charged for a Provisional Licence.

**A maximum fee of $25,000.00 will be charged for a Provisional Licence.

REVISION TO LICENCES:

The revision of either a Commercial Air Operator Licence or a Provisional Licence will have a cost of $500.

***If larger aircraft are included on the licence, the licence fee will be revised to use that aircraft in the calculation of the fees. The difference between the new fee and the old fee will be owed to the Authority.

FEES FOR PERMITS TO OPERATE NON-SCHEDULED SERVICES

INTERNATIONAL COMMERCIAL AIR TRANSPORT PERMITS:

APPLICATION FEE	$100.00
DAILY FEE	$120.00

DOMESTIC COMMERCIAL AIR TRANSPORT PERMITS:

APPLICATION FEE	$100.00
DAILY FEE	$80.00

COMMERCIAL AERIAL WORKS PERMITS:

APPLICATION FEE	$100.00
DAILY FEE	$50.00

REVISION TO PERMITS:
$60.00 per revision

END

PIARCO INTERNATIONAL NOTAM OFFICE

AIC

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PIARCO FIR (TTZP) RVSM IMPLEMENTATION

1. INTRODUCTION

1.1 The constant global increase of air traffic, the operational need for aircraft to fly at, or nearest to, their optimum flight levels and the demand for a better use of the airspace, have promoted the implementation of the reduced vertical separation minima (RVSM) of 1000 feet above FL290 in the different ICAO regions, such as North Atlantic, Asia-Pacific, Europe, South Atlantic EUR/SAM corridor (SAT), WATRS (West Atlantic Route System) and the Middle East, largely demonstrating its advantages and, without a doubt, representing the best solution for increasing the availability of optimum flight levels, while maintaining or improving the required safety levels.

1.2 The Third CAR/SAM Regional Air Navigation Meeting (CAR/SAM/3 RAN), Buenos Aires, Argentina, 1999, entrusted the CAR/SAM Regional Planning and Implementation Group (GREPECAS) with the development of the studies and evaluation of the needs and benefits resulting from RVSM implementation in both regions.

1.3 According to the analysis of major CAR/SAM Traffic Flows carried out by the UNDP/ICAO Regional Project RLA/98/003 “Transition to CNS/ATM Systems in the CAR and SAM Regions”, some sectors of the airspace are experiencing busy traffic especially during “peak” periods and hours. Consequently, a significant number of aircraft do not operate at their optimum flight level, negatively affecting the efficiency of operations.

1.4 GREPECAS/10 Meeting (Las Palmas, Canary Islands, Spain, October 2001), concluded that RVSM implementation would permit a better use of the airspace and benefit the air transport economy. In order to establish a seamless implementation strategy with the other ICAO regions, the decision for “RVSM Implementation in the CAR/SAM Regions” was ratified by GREPECAS/11 (Manaus, Brazil, December 2002) and GREPECAS/12 (Havana, Cuba, June 2004) Meetings, for 20 January 2005, concurrent with the ICAO NAM Region.

1.5 The aircraft operators and the Air Traffic Services providers could obtain significant benefits with RVSM implementation in the CAR/SAM regions that, among others, include:

a) Greater availability of optimum flight levels;
b) Better use of the airspace;
c) Increase in airspace capacity;
d) Use of standardized and harmonious ATS procedures;
e) Application of uniform separation minima;
f) Reduction of ground delays; and
g) Fuel savings of approximately 1% for flights carried out at, or near to, the optimum cruise levels.

1.6 Doc 9574, ICAO *Manual on the Implementation of a Vertical Separation Minima of 300 m (1000 ft) between FL 290 and FL 410 inclusive,* contains an extensive explanation for a safe RVSM implementation.

1.7 Based on that document, the RVSM Task Force (RVSM/TF) of the GREPECAS ATM Committee has developed the documentation and the RVSM operational procedures for their application in the CAR/SAM regions. The main documents are the following:

a) Guidance Material on the Implementation of a Vertical Separation Minima of 300 m (1000 ft) between FL 290 and FL 410 inclusive for Application in the Airspace of the Caribbean and South American Regions;

b) Caribbean and South American Regions RVSM Concept of Operations;

c) ATC Guidance Manual for RVSM Training in the CAR/SAM Regions.

Note 1: These documents are published on the ICAO NACC and SAM Regional Offices Websites:
www.mexico.icao.int
www.lima.icao.int

Note 2: The procedures for RVSM operations applicable to the CAR and SAM regions have also been included in ICAO *Doc 7030 – Parts CAR and SAM, Regional Supplementary Procedures*

Note 3: The regulations and procedures indicated below do not necessarily cover all the aspects required for operations in RVSM airspace, aircraft approval or monitoring.

The documents mentioned in paragraphs 1.6 and 1.7 of this AIC contain the applicable procedures for RVSM operations in the CAR/SAM regions. The WEB site of the Caribbean and South American Regional Monitoring Agency (CARSAMMA) www.cgna.gov.br presents detailed information required for RVSM approval and monitoring, as well as the applicable documents for the CAR/SAM regions.

2. IDENTIFICATION OF RVSM AIRSPACE

2.1 Airspace Delineation

2.1.1 Starting *at 0901 UTC on 20 January 2005*, the Piarco FIR defined by the following geographic coordinates, shall be designated *RVSM Airspace between* FL290 and FL410 inclusive.

1500N06500W – 1500N06315W – 1520N06300W – 1722N06300W –
1800N06200W – 1800N04500W – 2218N04000W – 1700N03730W –
1330N03730W – 1000N04800W – 0920N05400W – 0855N05700W –
0855N05957W – 0959N06128W – 0959N06156W – 1005N06203W –
1044N06147W – 1100N06230W to point of origin.

2.2 Vertical Separation Minimum (VSM)

2.2.1 The vertical separation minimum (VSM) to be applied in the RVSM airspace, described in paragraph 2.1.1, will be 1000 ft.

2.3 RVSM Implementation

2.3.1 RVSM will be implemented at 0901 UTC on 20 January 2005 in all NAM/CAR/SAM airspace.

2.4 **Transition Areas**

2.4.1 There are no Transition Areas within the Piarco Flight Information Region (FIR) (that airspace described in paragraph 2.1.1 above).

2.5 **RVSM Flight Level Allocation Scheme (FLAS)**

2.5.1 The flight level allocations in RVSM airspace will be made according to the following table:

CRUISING LEVELS ACCORDING TO TRACK (FLIGHT HEADING) CAR/SAM RVSM (FL 280 to FL 430)	
Track * from 180 º to 359 º * (EVEN LEVELS)	Track * from 000 º to 179 º* (ODD LEVELS)
←←←←←←←←←←←←←← FL 430 *(non-RVSM level)*	
	FL 410 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 400	
	FL 390 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 380	
	FL 370 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 360	
	FL 350 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 340	
	FL 330 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 320	
	FL 310 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 300	
	FL 290 →→→→→→→→→→→→→→
←←←←←←←←←←←←←← FL 280 *(non-RVSM level)*	

3. AIRWORTHINESS/OPERATIONS APPROVAL AND MONITORING

3.1 RVSM Approval - Operators operating or intending to operate in the RVSM airspace must obtain RVSM approval from the State of Registry or the State of Operator as appropriate.

3.2 Aircraft monitoring - Operators operating or intending to operate in the RVSM airspace shall participate in an RVSM Monitoring Programme, through which it is confirmed that the aircraft fulfils the height-keeping performance requirements.

3.2.1 Operators must present a plan for the completion of initial monitoring requirements to their respective Civil Aviation Authority.

3.2.2 The CAR/SAM Monitoring Agency (CARSAMMA) is responsible for the RVSM Monitoring Programme in the CAR/SAM Regions. The CARSAMMA shares monitoring information with other regions, including RVSM approval data.

3.3 Documentation for RVSM approval, monitoring and operation is obtainable from:

Trinidad and Tobago Civil Aviation Authority
P.O. Box 2163, National Mail Centre,
Golden Grove Road, Piarco
Trinidad and Tobago.
e-mail: piarcoacc@caa.gov.tt
website: caa.gov.tt

Administration:	Tel: (868) 669 4302	Fax: (868) 669 5397
Inspectorate:	Tel: (868) 669 4251/0519	Fax: (868) 669 5438
ATS:	Tel: (868) 669 4806/0635/8789	Fax: (868) 669 0635
AIS:	Tel: (868) 669 4128	Fax: (868) 669 1716

4. OPERATION OF NON RVSM APPROVED AIRCRAFT IN RVSM AIRSPACE

4.1 **Non-RVSM approved aircraft**, with the exception of State, Humanitarian, Maintenance and Ferry First Delivery aircraft **will NOT be allowed to operate in the Piarco RVSM airspace.**

4.2 Non-RVSM approved aircraft will only be authorized in RVSM airspace with sufficient communication and surveillance coverage.

4.3 The vertical separation of 2000 feet shall be applied between non-RVSM approved aircraft and all other traffic.

4.4 Preference in the use of flight levels will be given to the approved RVSM aircraft.

4.5 **Non-RVSM approved aircraft**, with the exception of State, Humanitarian, Maintenance and Ferry First Delivery aircraft **should flight plan outside the limits of RVSM airspace**.

4.6 Non-RVSM approved aircraft may be cleared out of RVSM airspace due to traffic or workload.

4.7 If safety is affected on account of non-RVSM approved aircraft operating in RVSM airspace, ATC can suspend, at any moment, authorization for such flights in the RVSM airspace.

4.8 Non-RVSM approved aircraft will be allowed to climb through or descend through RVSM airspace if operational circumstances permit such an operation, provided that the climb/descent is accomplished at no less than standard rate.

4.9 Such climbs/descents would be conducted only in areas of reliable direct pilot-controller communications, and shall be continuous through the RVSM stratum.

4.10 Controllers would ascertain whether the aircraft can climb/descend at an optimum rate so as to minimize its impact on other operations in RVSM airspace.

5. FLIGHT PLANNING

5.1 RVSM approved aircraft

5.1.1 RVSM approved aircraft are those that have all obtained certification to operate in RVSM airspace. Flights conducted by RVSM approved aircraft are allowed to flight plan and operate in the RVSM stratum. Aircraft operators shall indicate their status of RVSM approval by inserting the letter "W" in item 10 of the Flight Plan Form, independent of the flight level requested.

5.2 Non-RVSM approved aircraft

5.2.1 Non-RVSM approved aircraft are those that do not have the certification required for RVSM operations. Non-RVSM approved aircraft will only operate in RVSM airspace under one of the following conditions, and in which a vertical separation minimum of 2000 feet will be applied from all other aircraft:

5.2.1.1 STATE AIRCRAFT: Non-RVSM approved State aircraft are allowed to flight plan and operate in RVSM airspace. Filing of a flight plan shall serve as advance notice to ATC that the aircraft is requesting to operate in RVSM airspace. Non-RVSM approved State aircraft flight planning into RVSM airspace must include the following in Item 18 (Other Information) of their flight plan: "STS/NON-RVSM" or "STS/NON RVSM". Do not file a "W" in Item 10.

5.2.1.2 MAINTENANCE/FERRY FIRST DELIVERY AIRCRAFT: Non-RVSM approved aircraft on recognized maintenance or ferry first delivery flights may flight plan and operate in the RVSM stratum. Operators must file "STS/NON-RVSM" or "STS/NON RVSM" in Item 18 of the flight plan. Do not file a "W" in Item 10 of the flight plan. Additionally, the flight must accomplish the following requirements:

a) Ferry flight must be the original first delivery flight to the owner or state of registry.
b) Maintenance flight must have been formerly RVSM approved, but have experienced an equipment failure and is being flown to repair facilities in order to conduct the repairs necessary to regain RVSM approval.

5.2.1.3 HUMANITARIAN FLIGHTS: Non-RVSM approved aircraft on recognized mercy or humanitarian flights may flight plan and operate in RVSM airspace. Operators must file "STS/NON-RVSM" or "STS/NON RVSM" in Item 18 of the flight plan. Do not file a "W" in Item 10 of the flight plan.

Note 1: Aircraft operators requesting approval as one of the above flights in 5.2.1.2 or 5.2.1.3, shall, if departing from aerodromes within the Piarco FIR, obtain approval from the Piarco ACC normally not more than 12 nor less than 4 hours prior to the intended departure time. Once approval has been obtained, Operators are responsible for communicating this approval prior to departure to all ACCs that are affected by the operation of the flight.

*Note 2: Filing of the flight plan is **NOT** sufficient notification for flights proposing to operate in accordance with 5.2.1.2 or 5.2.1.3.*

6. PROCEDURES FOR SUSPENSION OF RVSM

6.1 SUSPENSION OF RSVM

6.1.1 Piarco ACC will consider suspending RVSM procedures within all or part of the Piarco FIR when there are pilot reports of greater than moderate turbulence or some other significant event. When RVSM procedures are suspended, the vertical separation minimum between all aircraft will be 2000 feet.

6.1.2 If the vertical separation aspect of RVSM must be suspended due to turbulence or some other significant event, the following guidelines should be applied to the situation:

6.1.2.1 The suspension of 1000 feet vertical separation should be for the minimum time necessary.

6.1.2.2 The suspension of 1000 feet vertical separation should be confined to the minimum geographical area necessary for safety or system efficiency.

6.1.2.3 The ATC unit or controller that is suspending the use of 1000 feet vertical separation should immediately provide the following information to all affected ATC Units and/or controller/s:

a) The reason for the suspension;
b) Time that the suspension is effective;
c) The estimated time period 1000 feet separation will be suspended;
d) The routes or airspace affected by the suspension;
e) Any traffic immediately affected by the suspension.

6.1.2.4 Alternatives to suspension of 1000 feet vertical separation should also be considered, such as re-routes or lateral separation, if practical.

6.1.2.5 If the suspension will be for a significant period of time, a NOTAM should be issued that contains at a minimum the information contained in 6.1.2.3. a) to d).

7. OPERATIONAL PROCEDURES BEFORE ENTERING RVSM AIRSPACE – RVSM APPROVED AIRCRAFT

7.1 Before entering the RVSM airspace, the pilot in command of RVSM approved aircraft must check that the following required equipment for flight in RVSM airspace is operating normally:

a) two independent primary altimetry systems;
b) a Mode C-capable SSR transponder;
c) an altitude-alert system;
d) an automatic altitude-keeping device (AKD).

7.2 If any of the required equipment listed in paragraph 7.1 is not operating normally, the pilot must notify ATC before entering RVSM airspace using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

8. OPERATIONAL PROCEDURES AFTER ENTERING RVSM AIRSPACE – RVSM APPROVED AIRCRAFT

8.1 During changes of level, an aircraft must not overshoot or undershoot its Cleared Flight Level (CFL) by more than 150 feet (45m).

8.2 Failure of One Primary Altimetry System

8.2.1 If one of the primary altimetry systems fails, but the remaining altimetry system is functioning normally, the pilot must:

a) Couple that system to the AKD (Automatic Altitude-Keeping Device);
b) Maintain increased vigilance of altitude-keeping;
c) Notify ATC of the failure using the phraseology, “For information, operating on one Primary Altimeter System Only”.

8.3 Failure of All Primary Altimetry Systems

8.3.1 If all primary altimetry systems fail, or are considered unreliable, the pilot must:

a) Maintain the flight level indicated on the standby altimeter (if equipped) at time of failure or when considered unreliable;
b) Alert nearby aircraft by turning on all exterior lights and, if not in direct contact with ATC, by broadcasting position, flight level, and intentions on 121.5 MHz;
c) Notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

8.4 Divergence in Primary Altimetry Systems’ Indication

8.4.1 If the primary altimeters diverge by more than 200 feet, the pilot must proceed as follows:

a) Attempt to determine the defective system through established “trouble-shooting” procedures and/or comparing the primary altimeter displays to the standby altimeter (as corrected by correction card, if required);
b) If the defective system can be determined, couple the functioning altimetry system to the AKD and proceed as in paragraph 8.2.1;
c) If the defective system cannot be determined, proceed as in paragraph 8.3.1.

8.5 Failure of the Mode C-capable SSR Transponder

8.5.1 If the mode C-capable transponder fails, the pilot must notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

8.6 Failure of the Altitude Alert System

8.6.1 If the altitude alert system fails, the pilot must notify ATC of the failure using the phraseology “UNABLE RVSM DUE EQUIPMENT”.

8.7 Failure of the Automatic Altitude-Keeping Device (AKD)

8.7.1 If the automatic altitude-keeping device (AKD) fails, the pilot must initiate the following actions sequentially:

a) Maintain Cleared Flight Level (CFL);
b) Evaluate the aircraft's capability to maintain altitude through manual control;
c) Watch for conflicting traffic both visually and by reference to ACAS/TCAS;
d) Alert nearby aircraft by turning on all exterior lights and, if not in direct contact with ATC, by broadcasting position, flight level, and intentions on 121.5 MHz;
e) Notify ATC of the failure using the phraseology "UNABLE RVSM DUE EQUIPMENT".

9. SPECIAL PROCEDURES FOR IN-FLIGHT CONTINGENCIES IN OCEANIC AREAS

9.1 Introduction

9.1.1 Although all possible contingencies cannot be covered, the procedures in 9.2 and 9.3 provide for the more frequent cases such as:

a) inability to maintain assigned flight level due to weather, aircraft performance or pressurization failure;
b) en route diversion across the prevailing traffic flow; and
c) loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations.

9.1.2 With regard to 9.1.1 a) and b), the procedures are applicable primarily when rapid descent and/or turn-back or diversion is required. The pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. ATC shall render all possible assistance.

9.2 General procedures

9.2.1 If an aircraft is unable to continue the flight in accordance with its ATC clearance, and/or an aircraft is unable to maintain the navigation performance accuracy specified for the airspace, a revised clearance shall be obtained, whenever possible, prior to initiating any action.

9.2.2 The radiotelephony distress signal (MAYDAY) or urgency signal (PAN PAN) preferably spoken three times shall be used as appropriate. Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and the overall air traffic situation.

9.2.3 If prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time and, until a revised clearance is received, the pilot shall:

a) leave the assigned route or track by initially turning 90 degrees to the right or to the left. When possible, the direction of the turn should be determined by the position of the aircraft relative to any organized route or track system. Other factors which may affect the direction of the turn are:
    1) the direction to an alternate airport;
    2) any lateral offset being flown, and
    3) the flight levels allocated on adjacent routes or tracks.
b) following the turn, the pilot should:

1) if unable to maintain the assigned flight level, initially minimize the rate of descent to the extent that is operationally feasible;
2) take account of other aircraft being laterally offset from its track;
3) acquire and maintain in either direction a track laterally separated by 15 NM from the assigned route or track in a multi-track system or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and
4) once established on the offset track, climb or descend to select a flight level which differs from those normally used by 150 m (500 ft);

c) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including the ATS route designator where defined) and intentions on the frequency in use and on 121.5 MHz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 MHz);
d) maintain a watch for conflicting traffic both visually and by reference to ACAS/TCAS;
e) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
f) keep the SSR transponder on at all times; and
g) take action as necessary to ensure the safety of the aircraft.

9.2.4 *Extended range operations by aircraft with two-turbine power-units (ETOPS)*

9.2.4.1 If the contingency procedures are employed by a twin-engine aircraft as a result of an engine shutdown or failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation, reminding ATC of the type of aircraft involved, and request expeditious handling.

9.3 Weather deviation procedures

9.3.1 *General*
Note.- The following procedures are intended for deviations around adverse weather.

9.3.1.1 When the pilot initiates communications with ATC, a rapid response may be obtained by stating “WEATHER DEVIATION REQUIRED” to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot should initiate the communications using the urgency call “PAN PAN” (preferably spoken three times).

9.3.1.2 The pilot shall inform ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the centre line of its cleared route.

9.3.1.3 *Actions to be taken when controller-pilot communications are established*

9.3.1.3.1 The pilot should notify ATC and request clearance to deviate from track, advising, when possible, the extent of the deviation expected.

9.3.1.3.2 ATC should take one of the following actions:
a) when appropriate separation can be applied, issue clearance to deviate from track; or
b) if there is conflicting traffic and ATC is unable to establish appropriate separation, ATC shall:
1) advise the pilot of inability to issue clearance for the requested deviation;

2) advise the pilot of conflicting traffic; and
3) request the pilot's intentions.
Sample Phraseology: "UNABLE (*requested deviation*), TRAFFIC IS (*call sign, position, altitude, direction*), ADVISE INTENTIONS"

9.3.1.3.3 The pilot should take the following actions:

a) comply with the ATC clearance issued; or
b) advise ATC of intentions and execute the procedures detailed in 9.3.1.3.4 below.

9.3.1.3.4 *Actions to be taken if a revised ATC clearance cannot be obtained.*
Note. — The provisions of this section apply to situations where a pilot needs to exercise the authority of a pilot-in-command under the provisions of Annex 2, Para. 2.3.1.

9.3.1.3.5 If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received the pilot shall take the following actions:

a) if possible, deviate away from an organized track or route system;
b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator where defined) and intentions, on the frequency in use and on 121.5 MHz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 MHz);
c) watch for conflicting traffic both visually and by reference to ACAS/TCAS;
Note.— If, as a result of actions taken under the provisions of 9.3.1.3.5 b) and c) above, the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.
d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
e) for deviations of less than 10 NM remain at a level assigned by ATC;
f) for deviations greater than 10 NM, when the aircraft is approximately 10 NM from track, initiate a level change in accordance with the Table below;

Route centre line track	*Deviations > 10 NM*	*Level change*
EAST 000° - 179° magnetic	LEFT	DESCEND 90 m (300 ft)
	RIGHT	CLIMB 90 m (300 ft)
WEST 180° - 359° magnetic	LEFT	CLIMB 90 m (300 ft)
	RIGHT	DESCEND 90 m (300 ft)

g) when returning to track, be at its assigned flight level when the aircraft is within approximately 10 NM of the centre line; and
h) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

10. SPECIAL PROCEDURES FOR STRATEGIC LATERAL OFFSETS IN OCEANIC CONTROLLED AREA (OCA) AND REMOTE CONTINENTAL AIRSPACE WITHIN CAR AND SAM REGIONS

Note.— The following lateral offset procedures are applicable for the mitigation of the increasing overlap probability due to increased navigation accuracy and wake turbulence encounters.

10.1 The use of highly accurate navigation systems (such as the global navigation satellite system (GNSS)) by an increasing proportion of the aircraft population has had the effect of reducing the magnitude of lateral deviations from the route centre line and consequently increasing the probability of a collision should a loss of vertical separation between aircraft on the same route occur.

10.2 The application of lateral offsets to provide lateral spacing between aircraft, in accordance with the procedures specified in 10.3 and 10.4, can be used to mitigate the effect of this reduction in random lateral deviations, thereby improving overall ATS system safety.

10.3 The application of lateral offsets requires authorization from the ATS authority responsible for the airspace concerned. The following considerations shall be taken into account by the ATS authority when planning authorization of the use of strategic lateral offsets in a particular airspace:

a) Strategic lateral offsets shall only be authorized in en-route oceanic or remote continental airspace. Where part of the airspace in question is within radar coverage, transiting aircraft should normally be allowed to initiate or continue offset tracking.

b) Strategic lateral offsets may be authorized for the following types of routes (including where routes or route systems intersect):

1) uni-directional and bi-directional routes; and

2) parallel route systems where the spacing between route centre lines is not less than 55.5km (30 NM).

c) In some instances it may be necessary to impose restrictions on the use of strategic lateral offsets, e.g. where their application may be inappropriate for reasons related to obstacle clearance.

d) These offset procedures should be implemented on a regional basis after coordination between all States involved.

e) The routes or airspace where application of strategic lateral offsets is authorized shall be promulgated in the aeronautical information publication (AIP); the procedures to be followed by pilots are depicted in the next para. 10.4

f) Air traffic controllers shall be made aware of the airspace within which strategic lateral offsets are authorized.

10.4 Lateral offset procedures to be applied by pilots

10.4.1 In the application of strategic lateral offsets, pilots should take the following points into consideration:

a) Offsets shall only be applied in airspace where this has been approved by the appropriate ATS authority.

b) Offsets shall be applied only by aircraft with automatic offset tracking capability.

c) The decision to apply a strategic lateral offset is the responsibility of the flight crew.

d) The offset shall be established at a distance of one or two nautical miles to the right of the centre line relative to the direction of flight.

e) The strategic lateral offset procedure has been designed to include offsets to mitigate the effects of wake turbulence of preceding aircraft. If wake turbulence needs to be avoided, one of the three available options (centreline, 1 NM or 2 NM right offset) shall be used.

f) In airspace where the use of lateral offsets has been authorized, pilots are not required to inform air traffic control (ATC) that an offset is being applied.

g) Aircraft transiting areas of radar coverage in airspace where offset tracking is permitted may initiate or continue an offset.

10.5 Pilots may, if necessary, contact other aircraft on the air-to-air frequency 123.45 MHz to coordinate offsets.

11. RVSM PHRASEOLOGY

11.1 The following RVSM phraseology will be used in RVSM operations - Pilot/Controller communications. * Denotes pilot transmission

CIRCUMSTANCES	PHRASEOLOGIES
... to ascertain RVSM approval status of an aircraft	**CONFIRM RVSM APPROVED**
... to report RVSM approved Status	* **AFFIRM RVSM**
... to report RVSM non approved status followed by supplementary information	* **NEGATIVE RVSM (*supplementary information*, *e.g. State Aircraft*)**
... to deny ATC clearance into RVSM airspace	**UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN (*or* DESCEND TO, *or* CLIMB TO) *level***
... to report when severe turbulence affects the ability of an aircraft to maintain height-keeping requirements for RVSM	* **UNABLE RVSM DUE TURBULENCE**
... to report that the equipment of an aircraft has degraded below minimum aircraft system performance standards	* **UNABLE RVSM DUE EQUIPMENT**
...to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations	**REPORT WHEN ABLE TO RESUME RVSM**
... to request confirmation that an aircraft has regained RVSM approved status or a pilot is ready to resume RVSM operations	**CONFIRM ABLE TO RESUME RVSM**
... to report ability to resume RVSM operations after an equipment or weather-related contingency	* **READY TO RESUME RVSM**

11.2 The following RVSM phraseology will be used in RVSM operations when coordinating between ATS units

CIRCUMSTANCES	PHRASEOLOGIES
... to verbally supplement estimate messages of aircraft non-approved for RVSM or to verbally supplement an automated estimate message exchange that does not automatically transfer information from Item 18 of the flight plan followed by supplementary information, as appropriate	**a) NEGATIVE RVSM [(*supplementary information, e.g. State Aircraft*)]**
... to communicate the cause of a contingency relating to an aircraft that is unable to conduct RVSM operations due to severe turbulence or other severe meteorological phenomena or equipment failure, as applicable	**b) UNABLE RVSM DUE TURBULENCE (*or* EQUIPMENT, as *applicable*)**

Revises AIC 03/16

PIARCO INTERNATIONAL NOTAM OFFICE

AIC

Tele: 1 868 669-4128
1 868 668-8222 ext 2510, 2564
FAX: 1 868 669 1716
AFTN: TTPPYNYX
Email:aispublications@caa.gov.tt

TRINIDAD & TOBAGO
CIVIL AVIATION AUTHORITY,
P.O. BOX 2163, NATIONAL MAIL CENTRE, PIARCO
REPUBLIC OF TRINIDAD AND TOBAGO

01/16

07 JUL 16

REPUBLIC OF TRINIDAD AND TOBAGO

FANS-1/A OPERATIONS IN THE PIARCO FIR

Introduction

This AIC is intended to provide flight crews and operators wishing to conduct FANS-1/A operations within the Piarco FIR with information relating to the CPDLC message sets for FANS equipped aircraft, ATC procedures, CPDLC/ADS-C log-on procedures, connection information and details relating to the airspace where a FANS-1/A service would be available.

This document also contains a small subset of what is expected to be the most common data link procedures, and the procedures developed to provide a data link service to FANS equipped aircraft.

FANS -1/A Airspace

The entire FIR of Piarco will be designated as FANS-1/A airspace with the following limitations.

- Full FANS- 1/A (CPDLC and ADS-C) service will be available East of 057^0 W longitude from FL060 and above.
- Flights operating West 057^0 W longitude will logon to Piarco only when instructed to do so.
- Flights operating West of 057^0 W longitude shall expect only a CPDLC service.

FANS-1/A Service

A 'Log-On' address refers to the designator for a given Data Authority
For Piarco the FANS-1/A Log On address is TTZP.

Aircraft LOG-ON

FANS-1/A Log On should be established at least 15 minutes prior to the entry time for the Piarco FIR boundary. For flights departing aerodromes in the Piarco's FIR, Log On may be conducted by aircraft on the ground.

Required Aircraft LOG-ON parameters

A FANS-1/A service is only established when all the required Log On parameters match those contained in the ICAO flight plan.

Requirements for a FANS1/A LOG-ON

- Aircraft-ID as stated in item 7 of the ICAO flight plan, and the aircraft registration.
- Departure and destination airfields (not IATA codes).
- Route as stated in the ICAO flight plan

These are used to match the particular flight with the flight plan stored in the ground system.

Flight Planning

In order to use FANS-1/A services, aircraft operators shall file equipage J1 – J7 (as appropriate) in field 10a of their flight plan to indicate CPDLC equipage and D1 in field 10b to indicate ADS-C capability.

Notes:

I. Using IATA flight ID, inserting additional leading zeros or spaces will result in a failed LOG-ON.

II. Incorrectly filed flight plans or late change of aircraft frame may result in a failed LOG-ON unless the flight plan is updated.

III. *Operators shall desist from including hyphens in the aircraft registration when filing.*

Aircraft **must** be set to Log On to the correct Data Authority.

Establishing CPDLC Connection

Although an aircraft (FANS equipped) may be logged-on to a Data Authority, no CPDLC service will be available until an active CPDLC connection has been established.
The previous Data Authority is required to send a CPDLC END SERVICE REQUEST message to the aircraft.
A CPDLC CONNECTION REQUEST must then be sent by the receiving ground system and acknowledged by the airborne system.
On entry at Piarco's FIR a CPDLC position report should be made to verify that Piarco is the CURRENT DATA AUTHORITY.
If the downlink message fails then the pilot should attempt a manual logon by **SELECTING ATC COMM OFF THEN LOGON TO TTZP.**

Position Reporting

ADS-C shall be the primary means of position reporting in airspace East of 057^0 W longitude. Flights that are not ADS-C capable shall make reports via CPDLC or voice on the HF assigned.

Transfer of CPDLC between Piarco Data Authority and Adjacent Data Authorities

When possible, Piarco ground system will attempt to automatically nominate the appropriate Next Data Authority (NDA) to continue the CPDLC service. Crews should be aware that this may not always succeed and a manual log-on to the Next Data Authority may be required.

Supported Downlink Messages

Reference Number	Message Use	Message Element
DM 0	The instruction is understood and will be complied with	WILCO
DM 1	The instruction cannot be complied with	UNABLE
DM 2	Wait for a reply	STANDBY
DM 3	Message is Received and Understood	ROGER
DM 6	Request to fly at the specified Level	REQUEST [*level*]
DM 9	Request to climb to the specified Level	REQUEST CLIMB TO [*level*]
DM 10	Request to descend to the specified level	REQUEST DESCENT TO [*level*]
DM 22	Request to track from the present position direct to the specified position	REQUEST DIRECT TO [*position*]
DM 63	A system-generated denial to any CPDLC application message sent from a ground facility that is not the current data authority.	NOT CURRENT DATA AUTHORITY
DM 65	Used to explain the reasons for pilot's message	DUE TO WEATHER
DM66	Used to explain the reasons for pilot's message	DUE TO AIRCRAFT PERFORMANCE
DM 67	Normal urgency, low alert	[*free text*]
DM 98	Normal urgency, normal alert	[*free text*]

Supported Uplink Messages

Reference Number	Message Use	Message Element
UM 0	Indicates that ATC cannot comply with the request	UNABLE
UM1	Indicates that ATC has received the message and will respond	STANDBY
UM 3	Indicates that ATC has received and understood the message	ROGER
UM20	Instruction that a climb to a specified level is to commence and once reached the specified level is to be maintained	CLIMB TO AND MAINTAIN [*level*]
UM 21	Instruction that at the specified time a climb to the specified level is to commence and once reached the specified level is to be maintained	AT [*time*] CLIMB TO AND MAINTAIN [*level*]
UM 22	Instruction that at the specified position a climb to the specified level is to commence and once reached the specified level is to be maintained	AT [position] CLIMB TO AND MAINTAIN [*level*]
UM 23	Instruction that a descent a specified level is to commence and once reached the specified level is to be maintained	DESCEND TO AND MAINTAIN [*level*]
UM 28	Instruction that a descent is to commence at a rate such that the specified level is reached at or before the specified	DESCEND TO REACH [level] BY [time]
UM 25	Instruction that at the specified position a climb to the specified level is to commence and once reached the specified level is to be maintained	AT [position] DESCEND TO AND MAINTAIN [level]
UM 30	Instruction that a level within the defined vertical range specified is to be maintained.	MAINTAIN BLOCK [level] TO [level]
UM 46	Instruction that the specified position is to be crossed at the specified level. This may require the aircraft to modify its climb or descent profile.	CROSS [position] AT [level]

Reference Number	Message Use	Message Element
UM 74	Instruction to proceed directly from its present position to the specified position	PROCEED DIRECT TO [position]
UM 77	Instruction to proceed, at the specified position, directly to the specified position	AT [*position*] PROCEED DIRECT TO [*position*]
UM 82	Approval to deviate up to the specified distance from the cleared route in the specified direction	CLEARED TO DEVIATE UP TO [*specified distance*] [*direction*] OF ROUTE
UM 117	Instruction that the ATS unit with the specified ATS unit name is to be contacted on the specified frequency	CONTACT [UNIT NAME] [*frequency*]
UM 120	Instruction that the ATS unit with the specified ATS unit name is to be monitored on the specified frequency	MONITOR [UNIT NAME] [*frequency*]
UM 123	Instruction that the specified transponder code is to be selected	SQUAWK [*code*]
UM147	Instruction to make a position report	REQUEST POSITION REPORT
UM 148	Request the earliest time or position at which the specified level can be accepted.	WHEN CAN YOU ACCEPT [*level*]
UM 154	ATS Advisory that the radar service is terminated	RADAR SERVICES TERMINATED
UM 160	Notification to the avionics that the specified data authority is the next data authority. If no data authority is specified, this indicates that any previously specified next data authority is no longer valid	NEXT DATA AUTHORITY [*facility designation*]
UM 161	Notification to the avionics that the data link connection with the current data authority is being terminated.	END SERVICE
UM 169	Normal urgency attribute, low alert attribute	[free text]
UM 179	Instruction that the 'ident' function on the SSR transponder is to be actuated	SQUAWK IDENT

CPDLC Errors

If a flight crew receives an 'ERROR' response to a downlink message it should not be re-sent as this may generate another 'ERROR', and a possible time-out.

Important Notes

If a flight crew has any doubt regarding the content, validity or execution of a CPDLC message they must revert to voice communication immediately to clarify the meaning or intent of the message.
When querying a CPDLC UPLINK MESSAGE VIA VOICE, flight crews should reply with 'UNABLE', to the uplink message to close the dialogue.
Within Piarco's continental airspace (airspace west of 57W) CPDLC is a supplementary means of communication. Voice over R/T remains the primary means of communication.
In Piarco's oceanic airspace CPDLC shall be the primary means of communication and voice via HF shall be the alternate.

If a CPDLC instruction is superseded by a voice instruction, in order to avoid a time-out the flight crew are requested to respond 'UNABLE' to close the original CPDLC dialogue and follow the voice instruction**.**
Controllers may be required to respond to a downlink request with 'UNABLE' to close the dialogue.

Flight crews of FANS equipped aircraft are requested to respond promptly to uplinked CPDLC messages due to known network latency issues.
If a flight crew determines they will need a significant amount of time to respond to a message, they should send a STANDBY response.

Due to the potential for FANS message duplication, flight crews are requested to report any suspected instances of duplicated CPDLC messages by filing a safety occurrence report.

Operators should email fault reports or concerns to the Centralized Reporting Unit (CRU) at Piarco using the form contained in Appendix 2. This report should be sent as soon as the possible after the event to:
cru@caa.gov.tt

Flight Crews should respond as soon as possible to uplink messages to prevent a message time-out and to ensure no open dialogue exists.
Any queries relating to CPDLC operations should be sent to:**piarcoacc@caa.gov.tt** or **cru@caa.gov.tt**

CPDLC R/T Phraseology

APPENDIX 1

Operational Circumstance	Phraseology	Flight Crew Action
Controller uses a voice instruction to correct a CPDLC message	'(Aircraft Callsign) **DISREGARD CPDLC** (message type) **MESSAGE, BREAK** (followed by the correct clearance, instruction information or request)'	Crew to disregard a CPDLC message (of that type) that has arrived on the flight deck within the preceding 120 secs or one that arrives within the next 120 secs. If not already responded, crew to respond **UNABLE** to avoid message time out and unnecessary disconnects.
Delayed message or flight crew has not responded within 120 seconds.	'(Aircraft Callsign) **DISREGARD CPDLC** (climb/route/clearance, followed by executive instruction to clarify clearance) **DISCONNECT CPDLC AND REVERT TO VOICE'**	Crew to disregard a CPDLC message that has arrived on the flight deck within the previous 120 seconds and disconnect the CPDLC connection with the Current Data Authority. Crew will be required to LOG-ON manually with the next Data Authority
CPDLC Failure	**CALLSIGN/ALL STATIONS CPDLC FAILURE AT** (Unit) (followed by the appropriate clearance, instruction information or request)'	Crew shall revert to voice. ATC may require flight crews to clarify clearances.
Resumption of the normal use of CPDLC	**'ALL STATIONS RESUME NORMAL CPDLC OPERATIONS'**	

APPENDIX 2:

ANSP
Air Navigation
Service Provider

FANS Fault Notification Form

1. Reporting Date	**2. Reporting Unit/Agency**		
3. Callsign	**4. Aircraft Type**	**5. Registration**	**6. Fans Equipment**
7. Date of Occurrence	**8. Time of Occurrence (UTC)**	**9. Occurrence Position in FIR**	
10. Description and Action Followed:			
11. Crew/Controller Comments (If Any) :			

Classification:

1. Log-on received form aircraft not in your FIR
2. Aircraft Log-on with incorrect flight identification
3. Log-on from aircraft not declaring ADS capability in Flight Plan
4. Unknown ADS message received
5. Aircraft remain ADS connected after exiting airspace
6. Aircraft remain ADS connected after landing
7. Different reports in the same ADS message
8. Identical reports of Waypoint Change received in an ADS message
9. CPDLC Message: 'Not Current Data Authority"
10. Incorrect downlink CPDLC message/s have been received
11. Other (describe):_____

(Adapted from: ICAO EUR/SAM Corridor)

SEND TO: cru@caa.gov.tt

END

PIARCO INTERNATIONAL NOTAM OFFICE

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FAX: 1868 669-1716
AFTN : TTPPYNYX

Email: ttcaa@tstt.net.tt

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REPUBLIC OF TRINIDAD AND TOBAGO

AIC

06/10

15 DEC

VANCE WINKWORTH AMORY– NEVIS

APPROVED AIRCRAFT HANDLING AGENTS

To facilitate the requirement for all aircraft owners/operators arriving/departing Vance W. Amory International Airport to appoint an agent responsible for the handling of the aircraft and payment of dues and charges payable, an approved list of handling agents with their contact details is provided below.

TDC Airline Services (Nevis) Ltd. 1-869-469-9333

Nevis FBO Services Ltd. 1-869-662-9518

Claxton's Services 1-869-469-5155/5099

Omel's Ground Handling Services 1-869-662-9

PIARCO INTERNATIONAL NOTAM OFFICE

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Email: ais@caa.gov.tt

AIC

03/10

26 JUL 10

MAURICE BISHOP INTERNATIONAL AIRPORT (TGPY)

COLLECTION OF AIRPORT CHARGES

All operators are hereby advised that effective from July 1st, 2010 all airport charges at Maurice Bishop International Airport will be invoiced and collected by the International Air Transport Association (IATA) on behalf of Grenada Airports Authority.

The details of IATA are as follows:

Route de l'Aéroport 33
P.O. Box 416
CH-1215 Geneva 15 Airport
Switzerland

Telephone: +41 (22) 770-2525
Facsimile: +41 (22) 770-2678
TTY: GVAGIXB
Email: AEF@iata.org

The Charges to be collected by IATA on behalf of Grenada Airports Authority are the following:

- Landing Fees
- Navigation/Communication Fees
- Parking Fees
- Overtime Charges
- Airport Facilitation (VW)
- Airport Service & Security Service Recovery Charge (OS)
- Cargo (Through-put) Charge
- Concourse Fee (JF)
- Baggage Screening (FF)

-END-

PIARCO INTERNATIONAL NOTAM OFFICE

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Email: ais@caa.gov.tt

AIC

09/09

01 SEP

TRINIDAD AND TOBAGO

FOREIGN OPERATOR:- OPERATIONS SPECIFICATIONS

The Civil Aviation [(No. 10) Foreign Operator] Regulations, 2004 comes into effect on **1st October, 2009** by Legal Notice No. 35 of the Legal Supplement Part B - Vol. 47, No. 30 - 28th February 2008.

The above-mentioned regulations require all foreign operators to apply for and receive, Operations Specifications issued by the Trinidad and Tobago Civil Aviation Authority (TTCAA) by **30th September 2009.**

All foreign operators' licences and journey permits **will become void on 1st October 2009** for those foreign operators who do not have Operations Specifications issued by the TTCAA.

Guidance for foreign operators is available on the TTCAA website www.caa.gov.tt in Technical Advisory Circular (TAC) -012.

Further information and guidance are available at the TTCAA Safety Regulations Division via the following telephone numbers: (868) 669-4251/0519/6837/6836.

END

PIARCO INTERNATIONAL NOTAM OFFICE

TRINIDAD & TOBAGO

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Email: ttcaa@tstt.net.tt

CIVIL AVIATION AUTHORITY
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GOLDEN GROVE ROAD,
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REPUBLIC OF TRINIDAD AND TOBAGO

AIC

07/09

25 MAR

REPUBLIC OF TRINIDAD AND TOBAGO

NEW LICENCE FORMAT

□□ INTRODUCTION

1.1 This AIC is issued in the exercise of the powers conferred under the Trinidad and Tobago Civil Aviation Regulations [(No.1) General Application and personnel Licensing Regulations, 2004 Part 1]. With effect from 0000 UTC on 25th March 2009, a New Credit Card type Licence for all category of Pilots and Air Traffic Controllers will be introduced.

1.2 The purpose of this AIC is to explain to Pilots and Air Traffic Controllers the format of this new licence.

1.3 It is important to note that under the new Licensing system it will be the responsibility of the licence holder to ensure the continued validity of the licence and associated ratings when exercising the privileges of the licence.

1.4 An airman licence issued by the Authority under this Part (Part1) shall –

a) Be in the prescribed form on first quality paper or other suitable material including plastic cards;
b) Be in the English Language ; and
c) Contain the following information clearly shown so that the privileges of the licence and validity of ratings can be easily determined:

.

i. The words "REPUBLIC OF TRINIDAD AND TOBAGO"
ii. The title of the licence;
iii. The serial number of the licence, in Arabic numerals;
iv. The name of the holder in full;
iv.a The date of birth of the holder;
v. The address of the holder;
vi. The nationality of the holder;
vii. The signature of the holder;

viii. Authority and, where necessary, the conditions under which the licence is issued;

ix. Certification concerning the validity and authorization for the holder to exercise such privileges appropriate to licence;

x. The signature of the officer issuing the licence and the date of such issue;

xi. A seal or stamp of the authority issuing the licence;

xii. Ratings, such as category, class, type of aircraft, airframe and aerodrome control instructor and radiotelephony privileges which may appear on the licence form or on a separate certificate; o Remarks such as special endorsements relating to limitations and endorsements for privileges.

- o A photograph which will be taken by the Authority by the Licensing Clerk with the following background
- o ATPL - Green o CPL - Blue o PPL - Brown
- o AIR TRAFFIC CONTROLLER - Yellow ; and

xiii. Such other details as required by the Authority.

This licence is non-expiry.

1.5 The present licence book format remains valid and in force until the new credit card type licence has been obtained.

END

Replaces AIC 05/09

PIARCO INTERNATIONAL NOTAM OFFICE

TRINIDAD & TOBAGO
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AIC

06/07

01st MAY 2007

TRINIDAD AND TOBAGO

NEW FORMAT-TTCAA AIRMAN KNOWLEDGE EXAMINATIONS

Introduction

Effective 1st May, 2007, the format of the TTCAA (Trinidad and Tobago Civil Aviation Authority) Airman Knowledge Examinations will be as described below. This new modular approach to Airman Certification is such that each level of licence builds upon the knowledge and skills learned at the previous level.

Description of format

The TTCAA's new written examination system consists of a very comprehensive databank of questions that are routinely refreshed and updated. Examinations are delivered to candidates as a randomly selected number of questions from each major area of knowledge and these are complemented by printed reference material such as charts, maps, graphs and tables that are required to be interpreted to answer some of the questions.

Questions are answered by making a selection from a multi-choice format on an inter-active computer screen. An examination time limit is imposed by the computer and the examination is marked by the computer almost instantaneously. Students will be required to provide knowledge examination results to their skill test examiner so that the examiner can provide additional emphasis during the skill test of the knowledge test questions which were answered incorrectly in the knowledge examination.

The examinations are done on computer in the English language, therefore knowledge of the use of computers as well as knowledge of the English language are required.

All Examinations would have an administrator.

Transition Period

The current examination format will be run concurrently with the new. There will be a transition period of up to the end of September 2007 during which students must complete the examination undertaken under the current system. All applications for examinations can be made at the administrative centre. The system for all bookings for examinations remains unchanged.

Guidance for applicants

The following TTCAA Advisory Circulars [TACs] provide guidance for applicants preparing to write the knowledge examinations:

TAC PEL 050	Subject Matter Codes for Airman Knowledge Testing
TAC PEL 051	Airman Knowledge Testing Authorization Requirements Matrix
TAC PEL 055	Private Pilot Knowledge Test Guide
TAC PEL 060	Instrument Rating Knowledge Test Guide
TAC PEL 065	Commercial Pilot Knowledge Test Guide
TAC PEL 075	Airline Transport Pilot Knowledge Test Guide

These TACs can be purchased from the Trinidad and Tobago Civil Aviation Authority, P.O. Box 2163, National Mail Centre, Golden Grove road, Piarco, Republic of Trinidad and Tobago or downloaded from the TTCAA's website at http://www.caa.gov.tt.
Reference study material can also be downloaded from the TTCAA's website.

For further information, please contact the Licensing Section of the Trinidad and Tobago Civil Aviation Authority at **(868) 669-4302.**

Replaces AIC 05/07

-END-

PIARCO INTERNATIONAL NOTAM OFFICE

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AIC

03/07

01 JAN

REPUBLIC OF TRINIDAD AND TOBAGO

DATABASE INTERROGATION PROCEDURES

The Trinidad and Tobago Civil Aviation Authority has completed installation of the first phase of it's Aeronautical Information Service Database. This action is in harmony with the basic principles of an automated AIS System found in Chapter 9 of the AIS Manual (Doc 8126) the purpose of which is to improve the overall speed, accuracy and cost-effectiveness of the AIS. This system complies with ICAO's standardization of procedures including some contained in the Common Operating Practices Manual for CAR/SAM States.

This system improves on the already automated NOTAM service in the following areas:

a) It strictly adheres to the ICAO NOTAM Format including the use of qualifiers which facilitate sorting and retrieval of NOTAM.

b) It keeps a record of NOTAM which are no longer valid to facilitate message history and tracking.

c) It supports a wide variety of system interrogation procedures.

d) It makes available the latest PIB for aerodrome.

e) It makes available checklists of NOTAM by FIR.

f) It makes available lists of NOTAM for a specific series.

The following pages contain a list of interrogation procedures available.

PIARCO AIS DATABASE INTERROGATION PROCEDURES

Please note the following:

<NOF> is the four letter ICAO code for any issuing International NOTAM Office;
<series> is the letter defining the series of the NOTAM requested;
<number> is the four digit serial number of the NOTAM requested; and
<year> is the two last digits of the year the NOTAM was issued

1) REQUEST FOR NOTAM BY NUMBER

i) COMMON OPERATING PRACTICES MANUAL CAR/SAM

a) REQUEST FOR SINGLE NOTAM

Format: RQN <NOF> <series><number>/<year>

e.g. : RQN TTPP A0098/06
This requests from the Piarco AIS database NOTAM number A0098 issued in 2006 by the Piarco NOF (represented by TTPP).

b) REQUEST FOR SEVERAL NOTAM IN CONSECUTIVE ORDER

Format: RQN <NOF> <series><number>/<year>-<series><number>/<year>

e.g. : RQN TTPP A0098/06-A0102/06
This requests from the Piarco AIS database NOTAM numbers A0098 to A0102 issued in 2006 by the Piarco NOF (represented by TTPP).

c) REQUEST FOR SEVERAL NOTAM IN RANDOM ORDER

Format: RQN <NOF> <series><number>/<year> <series><number>/<year> <series><number>/<year>

e.g. : RQN TTPP A0098/06 A0100/06 A0102/06
This requests from the Piarco AIS database NOTAM numbers A0098, A0100 and A0102 issued in 2006 by the Piarco NOF (represented by TTPP).

ii) ICAO DOC 8126 AIS MANUAL

a) REQUEST FOR SINGLE NOTAM

Format: ONB//<NOF>,<series><number>/<year>

e.g. : ONB//TTPP,A0098/06
This requests from the Piarco AIS database NOTAM number A0098 issued in 2006 by the Piarco NOF (represented by TTPP).

2) REQUEST FOR NOTAM CHECKLIST BY FIR (NOTAM NUMBERS ONLY)

i) COMMON OPERATING PRACTICES MANUAL CAR/SAM (Retrieves individual series for requested FIR)

a) SINGLE CHECKLIST REQUEST (Numbers Only)

Format: RQL <NOF> <series>

e.g. RQL TTPP A
This requests from the Piarco AIS Database a checklist of NOTAM series A issued by TTPP International NOTAM Office.

b) MULTIPLE CHECKLIST REQUEST (Numbers Only)

Format: RQL <NOF> <series> <series> <series>

e.g. RQL TTPP A B H
This requests from the Piarco AIS Database checklists of NOTAM series A, B and H issued by TTPP International NOTAM Office. *(At present, the Piarco NOF issues only Series A NOTAM)*

ii) ICAO DOC 8126 AIS MANUAL (Retrieves all series for requested FIR)

a) SINGLE CHECKLIST REQUEST (Numbers Only)

Format: NCB//<NOF>

e.g. NCB//TTPP
This requests from the Piarco AIS Database a checklist of NOTAM, all series, issued by TTPP International NOTAM Office.

3) REQUEST FOR AERODROME BULLETIN

i) ICAO DOC 8126 AIS MANUAL (No Q code available in reply)

a) SINGLE AERODROME REQUEST

Format: AER//<aerodrome>
e.g. AER//TTPP
This requests from the Piarco AIS Database, all valid NOTAM for TTPP Aerodrome

b) MULTIPLE AERODROME REQUEST

Format: AER//<aerodrome>,<aerodrome>,<aerodrome>
e.g. AER//TTPP,TBPB,TGPY
This requests from the Piarco AIS Database, all valid NOTAM for TTPP, TBPB and TGPY Aerodromes.

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REPUBLIC OF TRINIDAD AND TOBAGO

AIC

06/05

07 OCTOBER

REPUBLIC OF TRINIDAD AND TOBAGO

JOURNEY PERMIT REQUIREMENT- NON-SCHEDULED / CHARTER FLIGHTS

All Aircraft Handling Agents and Airlines are reminded that under the Air Navigation (Licensing of Air Services) Regulations Part III a Journey Permit must be obtained from the Trinidad and Tobago Civil Aviation Authority (TTCAA) before Unscheduled / Charter Flights are allowed to operate in / out of the Republic of Trinidad and Tobago.

END

PIARCO INTERNATIONAL NOTAM OFFICE

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REPUBLIC OF TRINIDAD AND TOBAGO

AIC

10/04

1 JUL

REPUBLIC OF TRINIDAD AND TOBAGO

FOREIGN OPERATOR REQUIREMENT FOR OPERATIONS SPECIFICATIONS

(1) Trinidad and Tobago Civil Aviation Regulations (TTCARs) have been revised and were published on 24 March 2004. These regulations have been published in 12 parts and can be obtained from the Trinidad and Tobago Government Printery, Victoria Avenue, Port of Spain, Trinidad.

(2) TTCAR No.10 covers the requirements for foreign operators and come into effect on 25th September 2004. The new regulations require that, in addition to obtaining an operating licence from Air Transport Licensing Authority, each foreign air operator must obtain Operations Specifications issued by the TTCAA before conducting foreign air transport operations to and within Trinidad and Tobago. TTCAR No.10 contains detailed requirements governing application for the issue and amendment of operations specifications for foreign air operators.

(3) Application for foreign air operator Operations Specifications should be made by letter at least **90 days** before the date of intended operations. The Letter of Application must contain the applicable information prescribed in TTCAR No.10: 5.(3). In addition to the Letter of Application, the applicant must present for review a copy of his Air Operator Certificate or equivalent document issued by his foreign civil aviation authority. The application shall be accompanied by the following:

(a) a copy of a valid air operator certificate or equivalent document issued by the foreign authority;

(b) a copy of the licence or authorization granted to the air operator by the appropriate authority of the State of the air operator to operate an air transport service to, from and within Trinidad and Tobago;

(c) a copy of the Company Operations Manual including the Cabin Crew Manual where it is published as a separate document;

(d) a copy of the approval page for a Minimum Equipment List for each aircraft type intended to be operated by the air operator in Trinidad and Tobago;

(e) a copy of a valid Certificate of Airworthiness for each aircraft type intended to be operated by the foreign air operator in Trinidad and Tobago;

(f) a representative copy of a Certificate of Registration issued for the aircraft types proposed to be operated by the air operator in Trinidad and Tobago;

(g) a copy of a document identifying the maintenance checks that are required to be carried out for aircraft of the air operator while they are operated in Trinidad and Tobago;

(h) a copy of the maintenance contract between the air operator and the Approved Maintenance Organization, where the maintenance under subparagraph (g), is carried out by an Approved Maintenance Organization approved by the foreign authority;

(i) a copy of the lease agreement for any aircraft operated by the air operator which is not registered by the foreign authority;

(j) a copy of any equivalent Operations Specifications issued by the foreign authority for any specialized flight operations specifications requested by the foreign air operator for operations in Trinidad and Tobago;

(k) a proposed Aircraft Operator Security Programme for the foreign air operator which meets the requirements of the Trinidad and Tobago Civil Aviation [(No.8) Security] Regulations, 2004 for the acceptance and subsequent approval of the Authority; and

(l) any other document the Authority considers necessary to ensure that the intended operations will be conducted safely.

(4) Operations Specifications would be issued to a foreign air operator, subject to a satisfactory determination by the TTCAA that the applicant can meet the operating requirements of TTCAR No.10.

(5) Amendments to a foreign air operator's operations specifications may be initiated by either the operator or the TTCAA. An amendment shall be approved only after evaluation of the proposed change and a positive safety finding is made that the foreign air operator can meet the operating requirements of TTCAR No.10 in the conduct of any operation under the amended operations specifications.

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AIC

08/04

1 JUL

REPUBLIC OF TRINIDAD AND TOBAGO

TRINIDAD AND TOBAGO CIVIL AVIATION ACT AND REGULATIONS - AVAILABILITY

The Trinidad and Tobago Civil Aviation Authority Act 11 of 2001 and the Trinidad and Tobago Civil Aviation Regulations 2004, are available from :

The Government Printery,
Ministry of Communications and Information Technology
2 - 4 Victoria Avenue,
Port of Spain,
Republic of Trinidad and Tobago.

Tel: (868) 623-2410

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07/04

1 JUN

REPUBLIC OF TRINIDAD AND TOBAGO

VALIDATION OF FOREIGN LICENCES

The Civil Aviation Authority will validate a licence issued by another Contracting State, by issuing a suitable authorization to be carried with the foreign licence with such limitations and restrictions as the Authority may recommend.

LICENCES ELIGIBLE FOR VALIDATION

- Only a licence issued by an ICAO contracting state, or a country that has entered an agreement with Trinidad and Tobago may be validated.
- Before being validated for any purpose a foreign licence must be shown to be valid under the law of the issuing state and to be valid for privileges appropriate to the specific purpose.
- Military licences will not be accepted unless the applicant provides evidence to show the licence meets the requirements of ICAO Annex .1.

PURPOSES FOR WHICH FOREIGN LICENCES MAY BE VALIDATED

- For Private flights.
- For providing training on aircraft registered in Trinidad and Tobago.
- For operation of Trinidad and Tobago aircraft on Commercial air services in urgent circumstances. (An AOC holder must submit a written request for validation).

PERIOD OF VALIDATION

- Validation shall be issued for six (6) monthly periods, and in any event shall not exceed a total of twenty four (24) months.

METHOD OF VALIDATION

- Application for validation shall be made on the prescribed form.
- Applicants must submit two (2) recent I.D size photograph.
- Submission of Log Book (certified) and valid foreign licence.
- Payment of required fees.

- Letter from AOC holder (or other) requesting the validation.
- Authentic English translation of all documents, not in the English language.
- Applicants must pass an Oral Air Law Examination.
- Other documents that may be required.

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06/04

1 JUN

REPUBLIC OF TRINIDAD AND TOBAGO

GENERAL PROCEDURES FOR FLIGHT CREW LICENCE

Before Issuing, Validating or Converting a licence, the Civil Aviation Authority (CAA) must satisfy itself that the applicant meets in all respects, the standards of experience, knowledge, proficiency and other requirements, so as to be competent to perform the authorized activities or privileges granted by the licence. In addition the holder must meet certain standards in regard to medical fitness.

The following Flight Crew licences are issued directly by the State

- Student Pilot (Aeroplanes and Helicopters).
- Private Pilot (Aeroplanes and Helicopters).
- Commercial Pilot (Helicopters).

The following Flight Crew licences are Validated or Converted by the State

- Private Pilot (Aeroplanes and Helicopters).
- Commercial Pilot (Aeroplanes and Helicopters).
- Airline Transport Pilot (Aeroplanes and Helicopters).
- Flight Engineer.

The following Ratings are issued – (See TTCAR 1:22).

- Category
  - (i) Aeroplane
  - (ii) Rotocraft
- Class
  - (i) Single Engine (land and sea)
  - (ii) Multi Engine (land and sea)
- Type.
- Instrument (Aeroplane and Helicopter).
- Flight Instructor.

Medicals

All licence issued by the State are of the Non- Expiry type (Except Student Pilot's licence). All licences are Validated by a Medical Certificate (which forms part of the licence). Medical examinations are done by Doctors Authorised by the Civil Aviation Authority. (A list of Authorised Medical Doctors is obtainable from the CAA Head Office).

Direct Issuance of Licence.

Applicants for issue of licence must satisfy the requirements of TTCAR with respect to Knowledge and Skills Test, and satisfy the Medical requirements of TTCAR No 1:158.

Validation or Conversion of Foreign Licence

The CAA may validate or convert a licence issued by another Contracting State with limitations and restrictions as the Director General may recommend and subject to the conditions stated in TTCAR No 1.

Before any Licence is Validated or Converted the CAA will have to first determine the validity of the foreign licence.

Holders of Military licence (or equivalent) will not be accepted for Conversion or Validation unless the applicant meets at least the requirements of the Trinidad and Tobago Civil Aviation Regulations, or a similar Civilian licence.

Examinations

Dates for written examinations are published and available from the CAA'S Head Office at Piarco.

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AIC

02/04

1 JAN

REPUBLIC OF TRINIDAD AND TOBAGO

High Density Helicopter Operations Within Piarco FIR/CTR

To enhance flight safety within Piarco FIR/CTR, the following advisory is issued:-

1. High density helicopter operations exist within the Piarco FIR/CTR in an area bounded by straight lines joining coordinates 1021N06102W 1021N06030W 0954N06030W 1004N06102W to point of origin. This area is located Southeast of Trinidad:- Pt. Radix to Galeota Point and extends 32NM Eastwards. The helicopter flights normally depart from Camden Airfield, Couva – location: 1025N06127W – to the high density operational area.

2. Operating Altitude — SFC to 3000ft QNH

3. Hours of operation — Daily SR/0400 UTC
   Peak period operations — Mon to Fri 1030/1530 and 1800/0000 UTC

4. Flight information on helicopter operations is available on bpTT Company frequency 130.100MHz Callsign: “Galeota”.

5. Frequent helicopter operations also exist at Piarco airport and to and from the airport and the high density operational area. Most overland helicopter flights are conducted VFR and pilots are to exercise caution when operating in these areas.

Cancel AIC 04/02 dated 24th January 2002

PIARCO INTERNATIONAL NOTAM OFFICE

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10/02

24 JAN 2002

PIARCO FIR

REISSUE:- Replaces AIC 02/99 dated 25th February 1999.

Requirements for the use of GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) when flying in the Piarco Flight Information Region (FIR).

1. Introduction

1.1 This Circular sets out the airworthiness criteria and operational matters associated with the use of GPS when flying under IFR/VFR. The Circular considers the current status of GPS, the classes of airborne equipment, their use and the limitations prevailing. At present, these limitations restrict the use of GPS equipment only as a Supplemental Air Navigation System.

1.2 **Definitions**

a. Receiver Autonomous Integrity Monitoring (RAIM)

A technique whereby a GPS receiver/processor determines the integrity of the GPS navigation signals using only GPS signals augmented with barometric altitude.

b. Sole Means Air Navigation System

An approved navigation system that can be used for specified phases of operations without the need for any other navigation system.

c. Stand-Alone GPS Navigation System

A GPS navigation system that is not combined with other navigation sensors or navigation systems.

d. Supplemental Air Navigation System

An approved navigation system that can be used in conjunction with a sole means air navigation system.

e. CAA

Civil Aviation Authority of State of Registry

f. GLONASS

Global Orbiting Navigation Satellite System (USSR)

g. EGNOS

European Geostationary Navigation Overlay Service

h. MTST

Mulit-functional Transport Satellite System (Japan)

i. GNSS

Global Navigation Satellite System (generic term)

j. GPS

Global Positioning System

k. WGS84

World Geodetic System (1984) Datum

l. RAIM

Receiver Autonomous Integrity Monitoring

2. Description of GPS

2.1 The Navstar Global Positioning System (GPS) of the United States Department of Defense (DOD) is a satellite based radio navigation system. Today, twenty-four satellites are in various orbits approximately 11,000 nautical miles above the surface of the earth. Each satellite broadcasts a timing signal and data message. A portion of the data message gives a GPS receiver the orbital details of each satellite. The receiver measures the time taken for the signal to arrive from the satellites in view and from this information computes a position and velocity.

2.2 Three satellites are needed to determine a two dimensional position, and four for a three dimensional position. The elevation and geometry of each satellite relative to the receiver must satisfy certain criteria before the designed system accuracy can be achieved. Accuracy in predictable horizontal positions of 100 metres or better should be available on 95% of occasions and 300 metres or better on 99.99% of occasions.

2.3 The figures quoted for accuracy are based on the assumption that the position given is referenced to the World Geodetic System 1984 (WGS 84) Datum. This datum relates position on the Earth's surface or in space to a mathematically defined ellipsoid that approximates the complex shape of the earth. The point of origin of the WGS 84 Datum is the Earth's centre of mass. This allows position information to be derived for the world from one reference. ICAO has adopted WGS 84 as a World Standard.

2.4 Currently, position information throughout the world is derived from local or regional datums; for example, European Datum 1950 and Nouvelle Triangulations de France (NTF) 1970. These datums use different ellipsoids that approximate the shape of the earth over a selected area, but are not valid on a global scale. Conversion between datums is possible, but inherent inaccuracies present in National datums can result in large residual errors.

2.5 Consequently, a given position today could be referenced to one of many datums and that position may be significantly displaced from the coordinates of the same position when measured against WGS 84. Differences of several hundred metres are not uncommon. With the accuracy provided by today's ground based navigation aids – other than precision approach aids – these discrepancies in position between datums are of little importance. The introduction of position information provided by satellites for more precise navigation, changes this situation, but only when all positions worldwide are based on one datum, can the full potential of satellite navigation be realized. Until this stage is reached it is necessary to place some restrictions on the airborne use of the Navstar GPS constellation.

3. Limitations of GPS Constellation and Equipment.

3.1 In January 1994, the US DOD had declared Initial Operational Capability (IOC) for the constellation. This declaration has not yet been formally endorsed by the US Department of Transportation (DOT)/Federal Aviation Administration (FAA). Currently, the interim policy stated in this Circular parallels the use of GPS as authorized by the FAA. Following the endorsement of IOC by the DOT/FAA, the FAA proposes extending the conditions of use of GPS for certain phases of flight.

3.2 Most existing ground based navigation aids are flight calibrated and can signal an alarm if erroneous signals are being radiated. For example, VOR signal characteristics are monitored and where the set tolerances are not met, the VOR automatically stops transmitting. The GPS constellation is monitored from the ground and it may take some considerable time before users become aware of a malfunction within the system. Several possibilities for providing signal integrity equivalent to that obtained from conventional navigation aids are under consideration, but it will be some years before these possibilities are realized. At present, two methods exist within airborne equipment to provide the integrity of navigation when using GPS signals. Receiver Autonomous Integrity Monitoring RAIM and that given by an integrated navigation system where other sensors are used in addition to GPS.

3.3 In airborne equipment incorporating both the GPS sensor and navigation capability, determination of a 3D position requires four satellites with adequate elevation and suitable geometry. An additional satellite is needed to perform the RAIM function. A sixth satellite is required to isolate any faulty satellite and remove it from contribution to the navigation solution. Where a GPS receiver uses barometric altitude as an augmentation to RAIM, the number of satellites needed for the receiver to perform the RAIM function may be reduced by one, given appropriate geometry. Not all GPS receivers possess RAIM but in stand-alone GPS equipment this function is essential for airborne use when flying under IFR.

3.4 In airborne equipment where a GPS sensor provides data to an integrated navigation system e.g. FMS or a mutli-sensor navigation system, either the GPS sensor is required to provide RAIM or the mutli-sensor navigation system should possess a level of integrity equivalent to that provided by RAIM. This level of integrity is required when flying under IFR.

3.5 The availability of six satellites is less than 100% of all occasions. Consequently, the RAIM function may be interrupted.

4. Use of GPS

4.1 When the airborne navigation equipment using GPS is DCA approved as satisfying the relevant technical criteria, then operators may be approved to conduct flights when flying under IFR in oceanic, domestic en-route and terminal airspace subject to the conditions detailed below and in paragraph 7.

4.2 A stand-alone GPS-based Supplemental Air Navigation System may not be used for any GPS non-precision approach procedure until the database for the navigation system contains those procedures as depicted in the relevant published approach plates and referenced to WGS 84.

4.3 The use of GPS in any form for any type or part of any precision approach is not permitted.

4.4 The criteria presently specified may be superseded by Airworthiness and Operational Standards promulgated by the Director of Civil Aviation.

5. Composition and Approval of a Supplemental Air Navigation System using GPS.

5.1 A GPS Supplemental Air Navigation System may comprise:-

(a) a stand-alone GPS EQUIPMENT; or

(b) a multi-sensor system where at least one sensor is GPS.

6. Airworthiness Approval

6.1 To gain airworthiness approval for a GPS Supplemental Air Navigation System, the equipment and its installation will need to satisfy the following criteria.

(a) Stand- Alone equipment:

(i) Complying with FAA TSO-C129, Class A, or equivalent, and meeting the intent of the associated FAA Notice N8110.47, as revised. Copies of this information should be provided.

(ii) An approved sole means navigation system suitable for the route to be flown is fitted to the aircraft.

(b) Multi-Sensor equipment using GPS:

(i) Complying with FAA TSO-C 129, Classes B or C, or equivalent, and meeting the intent of the associated FAA Notice N8110.48, copies of this information should be provided, as revised; and

(ii) An approved sole means navigation system suitable for the route to be flown is fitted to the aircraft.

(c) Existing GPS installations:

Where a GPS sensor has been approved and installed in an aircraft as one component of an integrated navigation system on a "no-credit" basis, that system may be classed as a Supplemental Air Navigation System where it can be shown that a level of integrity to that given by RAIM is provided.

6.2 Approvals for the installation and use of this type of equipment should be in accordance with Civil Aviation Authority Regulations, as applicable, and must be obtained using the current certification procedures.

7. Operational Matters

7.1 Operation of GPS Equipment will require use in accordance with the limitations stated in the approved Flight Manual or Flight Manual Supplement. Furthermore, multi-sensor navigation systems employing GPS may be used for Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs) only when the operator has an operational approval to fly such procedures using an FMS. The following conditions also apply.

(a) Stand-Alone Equipment

(i) The approved sole means navigation system not using GPS to determine position must be serviceable and continuously displayed to and monitored by the flight crew when the GPS equipment is in use;

(ii) The GPS equipment is used during a non precision approach only where an approved procedure has been published by the Director of Civil Aviation and

(iii) The criteria stated in Attachment A are met.

(b) Multi-sensor equipment using GPS

The criteria stated in Attachment A must be met for flying a non-precision approach.

(c) Existing GPS Installations

Where these systems have received airworthiness approval for use as a Supplemental Air Navigation System they may be used for flying a non-precision approach provided the criteria stated in Attachment A are met.

7.2 Due to satellite coverage and their elevation and geometry relative to the receiver, the RAIM function will not always be available and may be lost for significant periods of time. Where this occurs, then the primary means of navigation must be by reference to the other approved navigation systems.

7.3 **Training**

GPS avionics require more pilot attention than traditional VOR and ADF receivers, particularly during approach. GPS units are essential navigation management computers, within many features, modes and controls. Before flying a stand-alone approach in instrument conditions, a pilot must be completely familiar with GPS fundamentals, avionics operation and the approach procedure to be flown.

8. The Future

8.1 At present, GPS, the most widely used satellite based system is not yet fully operational. GLONASS, the Russian Global Navigation Satellite System, is some way from reaching an operational capability. In the future, combinations of GPS and GLONASS plus other civil satellites and augmentation systems, are possible components for a civil Global Navigation Satellite System (GNSS).

This circular is issued for information, guidance and necessary action.

ATTACHMENT A

USE OF APPROVED GPS-BASED EQUIPMENT FOR NON-PRECISION APPROACHES

1. The use of GPS-based navigation equipment as a Supplemental Air Navigation System to fly any part of any instrument non-precision approach will be permitted when the following general and specific conditions are satisfied.

1.1 General

(a) The GPS equipment must be approved by the DCA as complying with FAA TSO-C129, Classes A1, B1, B3, C1, C3, or equivalent, and be installed to meet the intent of the applicable FAA Notice (N8110.47 or 8110.48, as revised)

(b) The navigation databases must contain current information on the non-precision approach to be flown; and

(c) All approach plates and databases must have position information in WGS84 coordinates, or equivalent; and

(d) The approach to be flown must be retrievable from the database, which must have stored:

(i) The location of all navigation aids required to define the approach; and

(ii) The location of all waypoints and intersections; and

(iii) Present the information in the order depicted on the published non-precision approach plate.

(e) If required, the nominated alternate airfield must have an approved non-GPS instrument approach procedure expected to be available at ETA; and

(f) The use of GPS equipment to fly non-precision approaches is initially restricted to approaches based on VOR, VOR/DME, NDB, NDB/DME and RNAV let-downs.

1.2 Specific

1.2.1 For the approach used:

(a) The operator must be authorized by the national authority in whose airspace the approach procedure is promulgated; and

(b) The appropriate navigation equipment, in addition to the GPS equipment, must be installed and operational in the aircraft; and

(c) The appropriate ground based navigation aid (s) must be serviceable.

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09/02

24 JAN 2002

EASTERN CARIBBEAN ACAS POLICY AND IMPLEMENTATION SCHEDULE

REISSUE:- Replaces AIC 02/00 dated 10th August 2000

PIARCO FIR

1. Introduction

The objective of this AIC is to describe the E/CAR ACAS Policy. It also gives an overview of the ACAS implementation schedule adopted in the PIARCO FIR and the associated TMAs and CTRs.

2. ACAS Description

ACAS is a safety equipment alerting pilots to the presence of transponder-equipped aircraft in the vicinity and providing assistance in the detection and resolution of potential conflict. The equipment is designed to operate independently of ground-based systems used by air traffic services for the prevention of collisions.
ACAS 2 provides two types of conflict advisories to the flight crew:

- Traffic Advisories (TAs) are indications showing the approximate position of transponding aircraft in the vicinity which may become a threat;

- Resolution Advisories (RAs) recommend manoeuvres or manoeuvre restrictions in the vertical plane to resolve conflicts with aircraft transponding SSR altitude reports.

ACAS 2, which is now available for implementation aboard aircraft, is known as TCAS 2. It is expected that TCAS 2 equipped aircraft will operate the equipment at all times when they are flying in PIARCO FIR and the associated TMAs and CTRs. Results of international safety studies show that there is a significant safety bebefit to be gained from a widespread carriage and operation of the Airborne Collision Avoidance System, TCAS 2. Operational experience in North America and in Europe shows that TCAS 2 perform effectively as an Airborne Avoidance System. In addition, new
TCAS 2 software (version 7) is being developed to further improve TCAS 2 operational acceptability.

Note: Compulsory carrying of transponders has been established in the E/CAR airspace.

ACAS POLICY AND IMPLEMENTATION SCHEDULE

Eastern Caribbean ACAS policy is to require the mandatory carriage and operation of an ACAS conforming to ICAO SARPs in the PIARCO FIR and the associated TMAs and CTRs. An implementation schedule has been adopted for mandatory carriage and operation of ACAS 2 such that:

1- With effect from 1st January 2002, all civil fixed-wing turbine-engine aircraft having a maximum take-off mass exceeding 15,000 kg, or a maximum approved passenger seating configuration of more than 30 shall be required to be equipped with ACAS 2.

2- With effect from 1st January 2005, all civil fixed-wing turbine-engine aircraft having a maximum take-off mass exceeding 5,700 kg, or a maximum approved passenger seating configuration of more than 19 shall be required to be equipped with ACAS 2, and,

3- In the interest of the earliest safety benefit, all aircraft operators are encouraged to equip with ACAS 2 compatible equipment as soon as possible in anticipation of any future compulsory date.

3. PROCEDURE TO BE FOLLOWED BY PILOTS

The ICAO provisions concerning the use of Airborne Collision Avoidance Systems indications are contained in PANS OPS (Doc 8168). Pilots shall comply with the operating procedures approved by the appropriate authority, in conformity with these provisions.

5. RESPONSIBILITY FOR SEPARATION OF AIRCRAFT DURING MANOEUVRES IN COMPLIANCE WITH A RESOLUTION ADVISORY.

For Air Navigation Services, the ICAO provisions in regard to aircraft equipped with Airborne Collision Avoidance Systems are contained in PANS- ATM (Doc 4444).
The use of ACAS does not alter the respective responsibilities of pilots and controllers for the safe operation of aircraft. On being notified that an aircraft under air traffic control is manoeuvring in accordance with a Resolution Advisory, a controller should not issue instructions to that aircraft, which are contrary to the resolution advisory as communicated by the pilot. Once an aircraft departs from an assigned ATC clearance in compliance with a Resolution Advisory, the Air Traffic Controllers within the whole airspace concerned by the manoeuvre induced by the Resolution Advisory, cease to be responsible for providing separation between that aircraft and other aircraft affected as a direct consequence of the manoeuvre. However, when circumstances permit, the controllers should endeavour to provide traffic information to aircraft affected by the manoeuvre and which may be known by the controllers. The controllers' responsibility for providing separation for all affected aircraft resumes when either:

a) The affected controller acknowledges a report from the pilot that the aircraft has resumed its assigned clearance, or

b) The affected controller acknowledges a report from the pilot that the aircraft is resuming its assigned clearance and issues an alternative clearance, which is acknowledged by the pilot.

6. REPORTING PHRASEOLOGY FOR RESOLUTION ADVISORY

Standard phraseology has been agreed internationally and recommended for adoption by ICAO. The phraseology to be used for the notification of manoeuvres in response to a Resolution Advisory is contained in appendix A of this circular.

7. ACAS II IMPLEMENTATION MONITORING

The contribution of operational personnel who take the time to complete Resolution Advisory report forms is essential because it provides a reliable means to monitor the ACAS implementation and to analyse ATS incidents with the aim of improving service quality.
For these reasons, flight crew are encouraged to report all TCAS resolution advisories including those which occur in the PIARCO FIR and associated TMAs/CTRs.
A copy of the ACAS Resolution Advisory report form is contained in appendix B of this circular.

8. RESOLUTION ADVISORY REPORTING PROCEDURE

Aircraft operators should dispatch all completed pilot report forms as soon as possible to the ATC unit responsible for providing ATS at the occurrence of the RA. A copy of the ACAS Resolution Advisory report form is contained in appendix B of this circular.

APPENDIX A
PHRASEOLOGY FOR ACAS
(Doc 4444 Ch 12 §3.1)

Circumstances		Phraseologys
After modifying vertical speed to comply with an ACAS Resolution Advisory (pilot and controller interchange)	*f)	TCAS CLIMB (or DESCENT):
	g)	(acknowledgement)
After ACAS 'Clear of Conflict' is announced (pilot and controller interchange)	*t)	RETURNING TO (assigned clearance):
	u)	(acknowledgement) (or alternative instructions)
After the response to an ACAS Resolution Advisory is completed (pilot and controller interchange)	*v)	TCAS CLIMB (or DESCENT) RETURNING TO (assigned clearance):
	w)	(acknowledgement) (or alternative instructions)
After returning to clearance after responding to an ACAS Resolution Advisory (pilot and controller interchange)	*x)	TCAS CLIMB (or DESCENT) COMPLETED, (assigned clearance) RESUMED:
	y)	(acknowledgement) (or alternative instructions)
When unable to comply with a clearance because of an ACAS Resolution Advisory (pilot and controller interchange)	*z)	UNABLE TO COMPLY< TCAS RA
	aa)	(acknowledgement):

- Denotes pilot transmission

APPENDIX B
ACAS RESOLUTION ADVISORY PILOT REPORT FORM

(Fill in blanks/circle correct answers)			
Aircraft Operator			
Name		Telephone	
(optional information)			
Aircraft ID	Registration		Type
Aerodrome of Departure		Destination	
Own altitude (when RA issued ft/FL		Clearance ft/FL	
Own aircraft position FIR:	VOR:	Radial:	DME:
Or	LAT:		LONG:
Or	TMA SID/STAR Procedure:		
Or	Radar Vectoring:		
ATC Unit:	Frequency:		SSR Code:
Phase of flight: Take-off/Climb/Cruise/Initial Descent/Hold/Approach/Final/Missed Approach			
TA Information(before RA)	TA Issued?: YES/NO		Visual contact Following TA?: YES/NO
RA Information			
(Intruders Information)	Bearing O'Clock		Range NM
	Relative altitude ft above/below Climb/Level/Descent		
Original RA	Reduce Climb/Reduce Descent/Monitor Vertical Speed		
	If Reduce/Monitor Vertical Speed, limits fpm to fpm		
Subsequent Message (s)	Climb Now/Descend Now/Increase Climb/Increase Descent/Monitor Vertical Speed/ Clear of Conflict.		
Did you follow the RA?	YES/NO	If YES, estimated deviation from clearance	
Was RA ?	Necessary/Useful/Nuisance		
Traffic information from ATC?	YES/NO		
ATC avoidance manoeuvre?	YES/NO	If yes, compatible with RA?	YES/NO
Flight conditions	IMC/VMC	Day/Night	Visibility NM

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ORGANIZATION OF EASTERN CARIBBEAN STATES (OECS):-

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Policy for use of Global Position System (GPS) Navigation Equipment in the OECS

For the organization of Eastern Caribbean States (OECS):- Antigua and Barbuda, Anguilla, Commonwealth of Dominica, Grenada, Monsterrat, St. Christopher (St. Kitts) and Nevis, St. Lucia and St. Vincent and the Grenadines.

1. Introduction

1.1 This circular sets out the airworthiness criteria and operational matters associated with the use of GPS when flying under IFR. The circular considers the current status of GPS, the classes of airborne equipment, their use and the limitations prevailing. At present, these limitations restrict the use of GPS equipment only as a supplemental Air Navigation System. The Director of Civil Aviation, Organization of Eastern Caribbean States regulates air navigation in the following countries:-

Antigua and Barbuda
St. Christopher (St. Kitts) and Nevis
Anguilla
Montserrat
Commonwealth of Dominica
St. Lucia
St. Vincent and the Grenadines
Grenada

1.2 Definitions of terms used and reference documents are at Annex A.

2 Description of GPS

2.1 The NAVSTAR Global Positioning System (GPS) of the United States Department of Defence (DOD) is a satellite based radio navigation system. Today, twenty-four satellites are in various orbits approximately 11,000 nautical miles above the surface of the earth. Each satellite broadcasts a timing signal and data message. A portion of the data message gives a GPS receiver the orbital details of each satellite. The receiver measures the time taken for the signal to arrive from the satellites in view and from this information, computes a position and velocity.

2.2 Three satellites are needed to determine a two dimensional position, and four for a three dimensiona1 position The elevation and geometry of each satellite relative to the receiver must satisfy certain criteria before the designed system accuracy can be achieved. Accuracy in predictable horizontal positions of 100 meters or better should be available on 95% of occasions and 300 meters or better on 99.99% of occasions.

2.3 The figures quoted for accuracy are based on the assumption that the position given is referenced to the World Geodetic System 1984 (WGS 84) Datum. This datum relates position on the earth's surface or in space to a mathematically defined ellipsoid that approximates the complex shape of the Earth. The point of origin of the WGS 84 Datum is the Earth's centre of mass. This allows position information to be derived for the world from one reference. ICAO is proposing to adopt was 84 as a world standard, to be in use by 1998.

2.4 Currently, positioning information throughout the world is derived from local or regional datums; for example, European Datum 1950 and Nouvelle Triangulation de France (NFT) 1970. These datums use different ellipsoids that approximate the shape of the Earth over a selected area, but are not valid on a global scale. Conversion between datums is possible, but inherent inaccuracies present in National datums can result in large residual errors.

2.5 Consequently, a given position today could be referenced to one of many datums and that position may be significantly displaced from the co-ordinates of the same position when measured against WGS 84. Differences of several hundred meters are not uncommon. With the accuracy provided by today's ground based navigation aids -other than precision approach aids -these discrepancies in position between datums are of little importance. The introduction of position information provided by satellites for more precise navigation changes this situation, but only when all positions world-wide are based on one datum can the full potential of satellite navigation be realized. Until this stage is reached it is necessary to place some restrictions on the airborne use of the Navstar GPS constellation.

3. Limitations of the GPS Constellation and Equipment

3.1 Most existing ground based navigation aids are flight calibrated and can signal an alarm if erroneous signals are being radiated. For example, VOR signal characteristics are monitored and where the set tolerances are not met the VOR automatically stops transmitting. The GPS constellation is monitored from the ground and it may take some considerable time before users become aware of a malfunction within the system. Several possibilities for providing signal integrity equivalent to that obtained from conventional navigation aids are under consideration, but it will be some years before these possibilities are realized. At present, two methods exist within airborne equipment to provide the integrity of navigation when using GPS signals: Receiver Autonomous Integrity Monitoring (RAIM) and that given by integrated navigation system where other sensors are used in addition to GPS.

3.2 In airborne equipment incorporating both the GPS sensor and navigation capability, determining of a 3D position requires four satellites with adequate elevation and suitable geometry. An additional satellite is needed to perform the RAIM function. A sixth satellite is required to isolate any faulty satellite and remove it from contributing to the navigation solution. Where a GPS receiver uses barometric altitude as an augmentation to RAIM, the number of satellites needed for the receiver to perform the RAIM function may be reduced by one, given appropriate geometry. Not all GPS receivers possess RAIM but in stand-alone GPS equipment this function is essential for airborne use when flying under IFR.

3.3 In airborne equipment where a GPS sensor provides data to an integrated navigation system e.g. FMS or a multi-sensor navigation system, either the GPS sensor is required to provide RAIM or the multi-sensor navigation system should possess a level of integrity equivalent to that provided by RAIM. This level of integrity is required when flying under IFR.

3.4 The availability of six satellites is less than 100% of all occasions, consequently, the RAIM function may be interrupted.

3.5 The limitations discussed above make GPS suitable for use only as a Supplemental Air Navigation System for certain phases of flight.

4. Use of GPS

4.1 When the airborne navigation equipment using GPS is DCA/OECS approved as satisfying the relevant technical criteria, then operators may be approved to conduct flights when flying under IFR in oceanic, domestic, en-route and terminal airspace subject to the conditions detailed below and in paragraph 7 .

4.2 A stand-alone GPS-based Supplemental Air Navigation System may not be used for any GPS non-precision approach procedure until the database for the navigation system contains those procedures as depicted in the relevant published approach plate and referenced to WGS 84.

4.3 The use of GPS in any form for any type or part of any precision approach is not permitted.

4.4 The criteria presently may be superseded by Airworthiness and Operational Standards promulgated by this Directorate.

5. Composition and Approval of a Supplemental Air Navigation System Using GPS

5.1 A GPS Supplemental Air Navigation System may comprise:

(a) a stand-alone GPS equipment; or
(b) a multi-sensor system where at least one sensor is GPS.

6. Airworthiness Approval

6.1 To gain airworthiness approval for a GPS Supplemental Air Navigation System, the equipment and its installation will need to satisfy the following criteria:

(a) Stand-Alone Equipment

(i) Approved by the DCA/OECS as complying with FAA TSO-C129, Class A, or equivalent, and meeting the intent of the associated FAA Notice N8110.47; and

(ii) an approved sole means navigation system suitable for the route to be flown is fitted to the aircraft.

(b) Multi-Sensor equipment using GPS

(i) Approved by the DCA/OECS as complying with FAA TSO-C129, Classes B or C, or equivalent, and meeting the intent of the associated FAA Notice N110.48; and

(ii) an approved sole means navigation system suitable for the route to be flown is fitted to the aircraft.

(c) Existing GPS Installations

Where a GPS sensor has been approved and installed in an aircraft as one component of an integrated navigation system on a ‘no-credit' basis, that system may be classed as a Supplemental Air Navigation System where it can be shown that a level of integrity to that given by RAIM is provided.

6.2 Approvals for the installation and use of this type of equipment as required by the applicable legislation must be obtained using the current certification procedures of British Civil Airworthiness Requirements (BCAR) which for the time being have been adopted by the DCA/OECS.

7. Operational Matters

7.1 Operation of GPS equipment will require use in accordance with the limitations stated in the approved Flight Manual or Flight Manual Supplement. Furthermore, multi-sensor navigation systems employing GPS may be used for Standard Instrument Departures (SIDs) and Standard Terminal Arrivals (STARs) only when the Operator has an operational approval to fly such procedures using an FMS. The following conditions also apply:

(a) Stand-Alone Equipment

(i) The approved sole means navigation system not using GPS to determine position must be serviceable and continuously displayed to and monitored by the flight Crew when the GPS equipment is in use; and

(ii) the GPS equipment is used during a non precision approach only where an approved procedure has been published by the national regulatory authority; and

(iii) the criteria stated in Annex B are met

(b) Multi-Sensor equipment using GPS

The criteria stated in Annex B must be met for flying a non-precision approach.

(c) Existing GPS Installations

Where these systems have received airworthiness approval for use as a Supplemental Air Navigation System they may be used for flying a non- precision approach provided the criteria stated in Annex B are met

7.2 Due to satellite coverage and their elevation and geometry re1ative to the receiver, the RAIM function will not always be available and may be lost for significant periods of time. Where this occurs, then the primary means of navigation must be by reference to other approved navigation systems.

8. The Future

8.1 At present, GPS is the only satellite-based system capable of giving a usable service to aviation. GLONASS, the Russian Global Navigation Satellite System, is some way from reaching an operational capability. Combinations of GPS and GLONASS plus other civil satellites and ground augmentation facilities are possible components for a civil Global Navigation Satellite System (GNSS). ICAO has established working groups to develop the principles governing the operation of GNSS.

8.2 It is evident that a GPS based system is potentially capable of achieving aeronautical navigation performance requirements for en-route, terminal area and precision landing. Many technical and institutional issues require resolution before GPS can be used in other than a supplemental role.

This Circular is issued for information, guidance and necessary action.

ANNEX A

1 Definitions

1.1 Receiver Autonomous Integrity Monitoring (RAIM)

1.1.1 A technique whereby a GPS receiver/processor determines the integrity of the GPS navigation signals using only only GPS signals augmented with barometric altitude.

1.2 Sole Means Air Navigation System

1.2.1 An approved navigation system that can be used for specified phases of operations without the need for any other navigation system.

1.3 Stand –alone GPS Navigation System

1.3.1 A GPS navigation system that is not combined with other navigation sensors or navigation systems

1.4 Supplemental Air Navigation System

1.4.1 An approved navigation system that can be use in conjunction with a sole means air navigation system.

2. References

EUROCAE Edition 58
Minimum Operational Performance Specification for Area Navigation Equipment using Multi-sensor Inputs.

EUROCAE Edition 58
Minimum Operational Performance Specification for Airborne GPS Receiving Equipment.

FAA TSO-C115 a
Airborne Area Navigation Equipment using Multi-sensor Inputs

FAA TSO-C129
Airborne Supplemental Navigation Equipment using the Global Positioning System. (GPS)

RTCA DO 208
Minimum Operational Performance Standards for Airborne Supplemental Navigation Equipment using Global Positioning System (GPS)

FAA NOTICE N8110.47
Airworthiness Approval of Global Positioning System (GPS) Navigation Equipment for use as a VFR and IFR Supplemental Navigation System

FAA NOTICE N8110.48
Airworthiness Approval of Navigation or Flight Management Systems Integrating Multiple Navigation Sensors.

Note: The two FAA Notices are time limited. They were due to expire in April 1994, by which time the FAA had intended to replace them with Advisory Circular Material

ANNEX B

USE OF APPROVED GPS-BASED EQUIPMENT FOR NON-PRECISION APPROACHES

1. The use of GPS-based navigation equipment as a supplemental Air Navigation System to fly any part of any instrument non-precision approach will be permitted when the following general and specific conditions are satisfied:

1.1 General

(a) The GPS equipment must be approved by the DCA OECS as complying with FAA FAA TSO-C129, Classes A1, B1, B3, C1, or C3 or equivalent and be installed to meet the intent of the applicable FAA Notices; and

(b) the navigation database must contain current information on the non-precision approach to be flown; and

(c) all approach plates and databases as of the 1st January 1998 must have position information in WGS84 coordinates or equivalent; and

(d) the approach to be flown must be retrievable from the database, which must have stored:

(i) The location of all navigation aids required to define the approach; and

(ii) the location of all waypoints and intersections; and

(iii) present the information in the order depicted on the published non-precision approach plate.

(e) if required, the nominated alternate airfield must have an approved non-GPS instrument approach procedure expected to be available at ETA; and

(f) the use of GPS equipment to flu non-precision approaches is initially restricted to approaches based on VOR, VOR/DME, NDB, NDB/DME and RNAV let-downs.

1.1.1 Specific

1.2.1 For the approach used:

(a) The operator must be authorised by the national authority in whose airspace the approach procedure is promulgated; and

(b) the appropriate ground based navigation aid(s) must be serviceable; and

(c) the appropriate navigation equipment, in addition to the GPS equipment, must be installed and operational in the aircraft.

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Documents to be carried on Board Civil Aircraft

Pilots in command of Civil Aircraft are reminded that they are required by law to have the following documents available for inspection at all times while operating flights within the territorial airspace of Trinidad and Tobago:-

(1) Pilots Licence(s)/Certificate(s).

(2) Aircraft Certificate of Registration.

(3) Aircraft Certificate of Airworthiness.

(4) Relevant Log Books.

Air Traffic Service Units in Trinidad and Tobago will not accept flight plans from Pilots of Civil Aircraft who are unable to produce any or all of the above documents on request.

Temporary Airman's Certificate and application for registration will NOT, repeat NOT be regarded as satisfying the requirements as at (1) and (2) above.