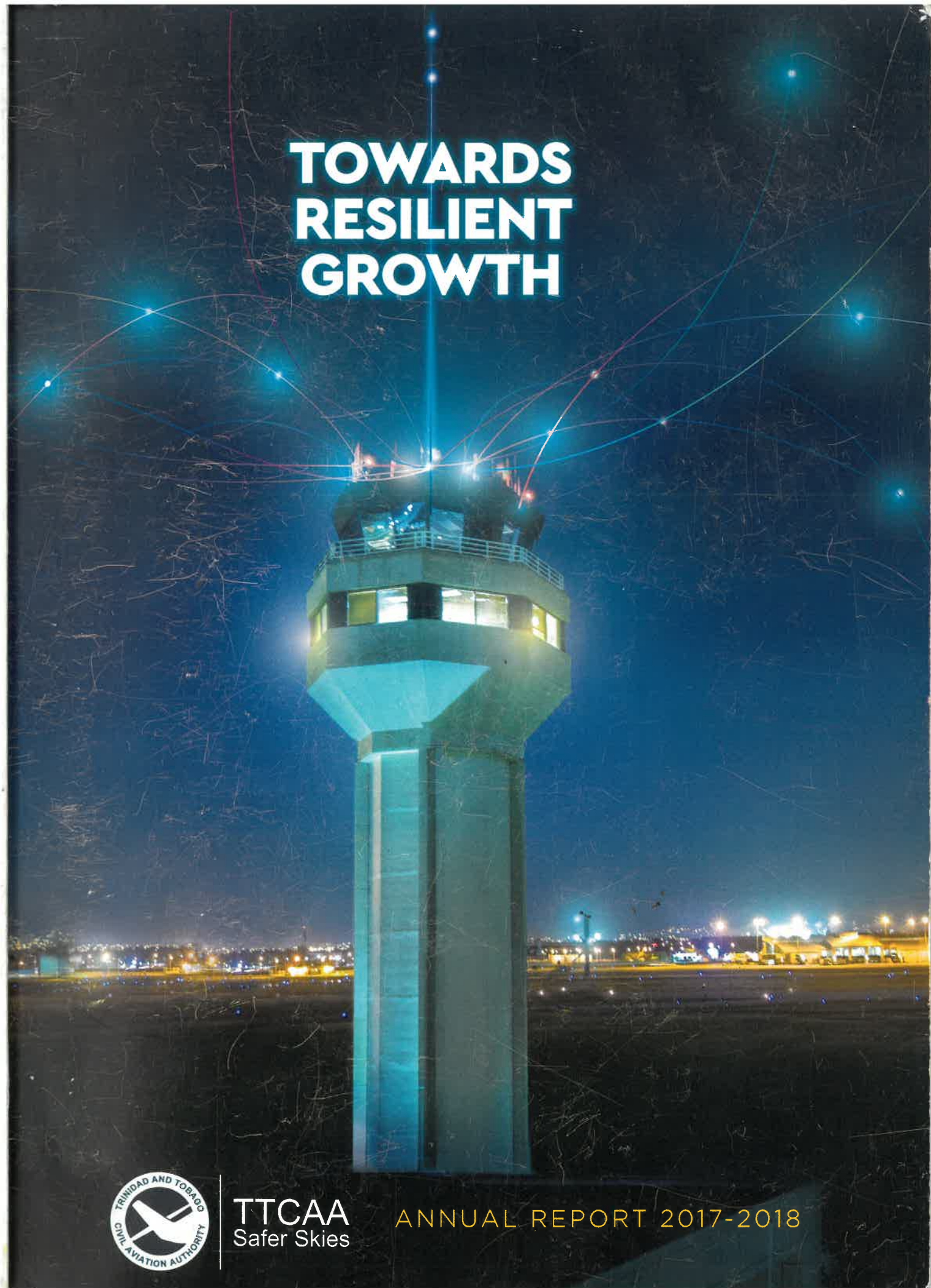




TTCAA
Safer Skies

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TOWARDS RESILIENT GROWTH



TTCAA
Safer Skies

ANNUAL REPORT 2017-2018

TOWARDS RESILIENT GROWTH

VISION

TO ENSURE THE HIGHEST LEVELS OF
SAFETY, SECURITY AND EFFECTIVENESS
IN THE TRINIDAD & TOBAGO
AVIATION INDUSTRY

MISSION

THE PROVISION OF A REGULATORY
FRAMEWORK TO FACILITATE A SAFE, SECURE
AND EFFECTIVE AVIATION INDUSTRY AND
AIR NAVIGATION SERVICES WITHIN THE
PIARCO FLIGHT INFORMATION REGION (FIR)

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The Board of Directors



Captain Thomas E. Lawrence, HBM
Chairman of the Board and Chairman of the Operations Committee



Mr. Francis Regis
Director General of Civil Aviation



Mr. Nigel Pantin
Board Member and Chairman of the Finance and Audit Committee



Mr. Ravindra Nanga
Board Member and Chairman of the Tenders Committee



Mr. Sheldon Baptiste
Board Member and Chairman of the Human Resource Committee



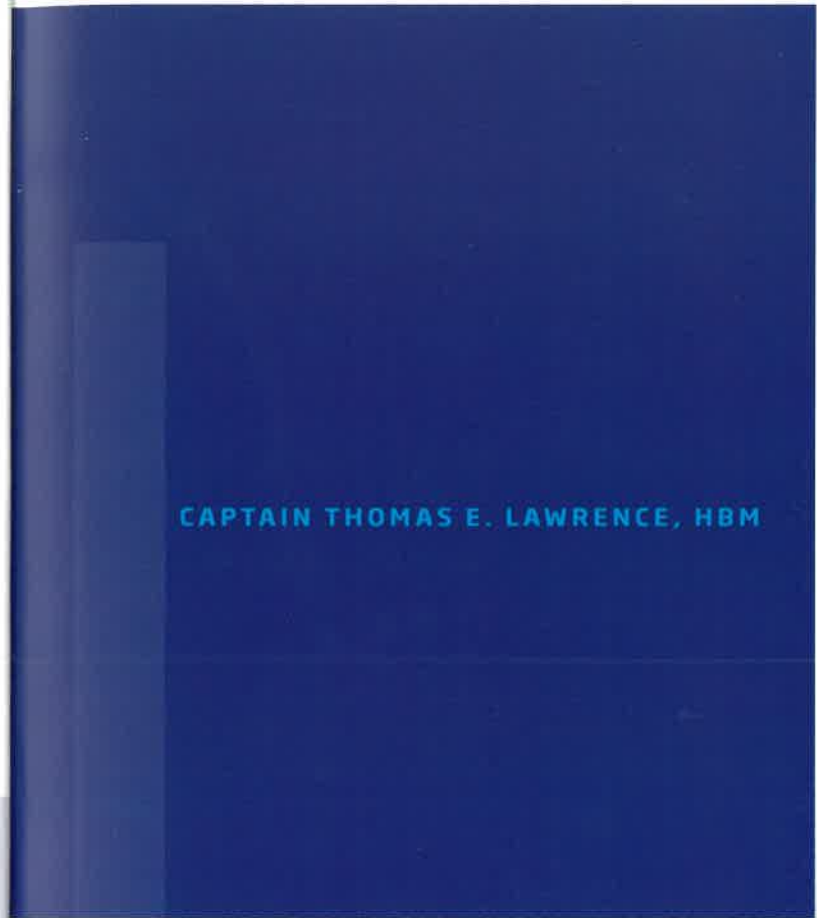
Nigel Wilson
Board Member and Deputy Chairman of the Operations Committee



Ms. Nadra Nathai-Gyan
Board Member and Deputy Chairman of the Finance and Audit Committee



Ms. Sandra Warner
Corporate Secretary/ Legal Officer



Message From The Chairman

The Trinidad and Tobago Civil Aviation Authority (TTCAA) is a body corporate with specific functions of maintaining a standard of safety and efficiency in civil aviation and the regulation of aviation activities in the twin island Republic of Trinidad and Tobago.

It's goal - A Transformation with Passion, Resilience and Excellence for "Safer Skies".

The TTCAA was established by the Civil Aviation Act, 2001 (Act 11 of 2001), with its principal function: to regulate and administer a safe civil aviation system whilst ensuring that Trinidad

and Tobago properly discharges its obligations under international civil aviation agreements and treaties in general and the Convention on International Civil Aviation "The Chicago Convention" in particular.

The 2017-2018 Annual Report expands a high-level overview of our strategic priorities, objectives and initiatives with a road map that guides these initiatives. It is appropriate and fitting that the report illustrates this year's mantra, "Towards Resilient Growth," which focuses on the continuance of growth and success of the TTCAA pinpointing our logo and watchwords, "Safer Skies".

During this fiscal period, the TTCAA focused on the following areas:

SAFETY REGULATION DIVISION



- Review and evaluation of the regulatory framework with emphasis on the TTCAA Act 11 of 2001 and Trinidad and Tobago Civil Aviation Regulations (TTCARs). The regulatory framework is being continuously reviewed in accordance with International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPS).
- The maintenance of a Safety Oversight System that meets all the requirements of the ICAO.
- The drafting of amendments to TTCAR 17 to specifically facilitate the core function of issuing Licences and Permits.

AIR NAVIGATION SERVICES



- Initiated the process for the upgrade of the Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) System, which includes replacement of the existing hardware and software.
- Upgrade of the Aeronautical Message handling System (AMHS), which was successfully concluded in July 2018.
- Reorganisation of the Upper Airspace of the Piarco Flight Information Region (FIR) - Implementation of four RNAV routes and design an agreement for the implementation of an additional three routes.
- In October 2017, Trinidad and Tobago became the first International Data Provider (IDP) to officially connect to the Federal Aviation Administration (FAA) Traffic Flow Management System (TFMS) via the System Wide Information Management (SWIM) initiative, allowing the publishing of ICAO Flight Plan, Departure, Arrival, and Tracking messages.

CORPORATE SERVICES DIVISION

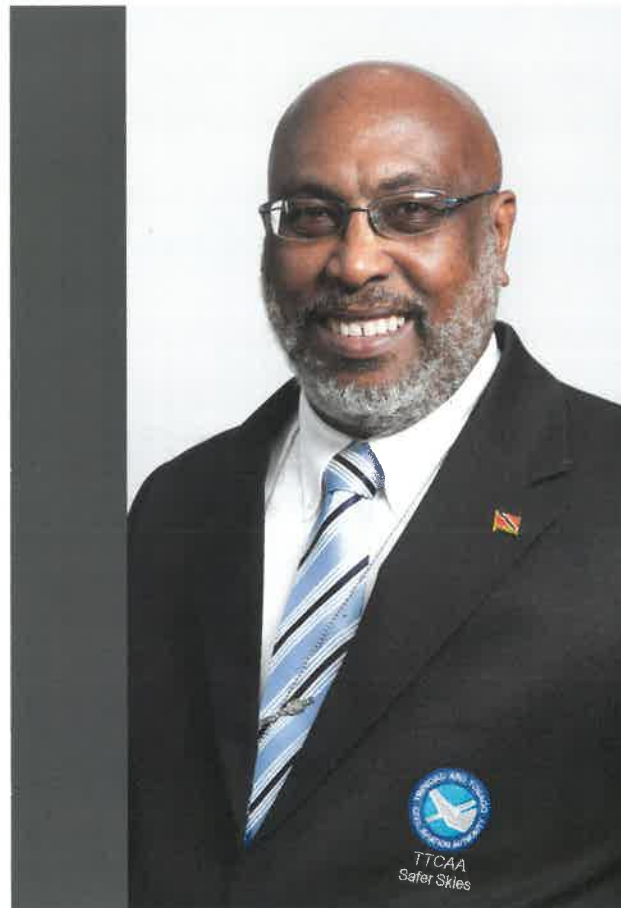


- Ensuring the highest standards of accountability, transparency and probity of the TTCAA's financial system.
- IT Optimisation Project and the Upgrade Internet Services to the TTCAA (Primary and Backup) by the implementation of a Primary Internet system.
- Completion of a comprehensive Salary Review Exercise for all active employees of the TTCAA. An extensive review of employees' employment history throughout the TTCAA was performed with special attention placed on the methodology for the award of increments on acting and/or subsequent immediate promotion. The review for non-active staff is at an advanced stage and will be completed in the next reporting period.
- Introduction of a new structured rostering system to ANS and ATS, which focused on rest, better separation of on and off duties and better quality of life for persons working on a shift system.

CIVIL AVIATION TRAINING CENTRE



- Completion of the revised organisational restructure for the CATC and an updated Business Plan for the re-branding of the CATC.
- Restructuring and modernisation of the ATC Diploma Programme through the implementation of online course delivery.
- Execution of the contract for the ANSA Aruba Surveillance training project, and other adjacent states of the Eastern Caribbean (OECS), the Cayman Islands and Suriname.



MR. FRANCIS REGIS

Message from the Director General

The Corporate Plan for the period 2017 to 2020 set out the goals and objectives for the Authority. The Annual Report outlines the performance of the Trinidad and Tobago Civil Aviation Authority (TTCAA) in accordance with the Plan.

In 2018, the TTCAA remained committed to continuous safety improvements and air navigation modernisation to ensure the proper discharge of its obligations under the Convention.

One of the major achievements attained in the fiscal year under review was the award of the contract in May 2018 for the upgrade of the Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) System. The upgrade specifically focused on the updating of the communication, navigation and surveillance processing to align the system with technological developments in international aviation standards. The end objective is an advanced air traffic system, with revolutionary hardware and software systems designed to assist the air traffic controllers in the management of domestic and international flights that fly within the Piarco Flight Information Region. All relevant statutory approvals were received from the Line Ministry for the modernisation of the air navigation infrastructure.

The Authority has continued to work with the relevant government agencies to ensure that the regulatory framework is consistent with the International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPS).

The strategic priority of the regulatory environment was maintained with the employment and training of qualified and competent personnel. Through the implementation of a robust auditing system and with the co-ordination and engagement of various stakeholders, the key strategic priority of aviation security continues to be realised.

Special emphasis was placed on the management of the budgeting and financial systems for the period under review. Based on the economic and funding environment, the financial resources were prioritised and aligned to key strategic focus areas within the Safety Regulation Division, the Air Navigation Services Division, the Corporate Services Division and the Civil Aviation Training Centre as outlined in the Corporate Plan. By focusing on the projects aligned to the strategic direction of the Authority, the achievements captured within the contents of the Annual Report were accomplished for the fiscal year 2017/2018.

To all the loyal staff members of the Authority, please accept my heartfelt gratitude for your services over the year as we aspire towards resilient growth in 2019.

Thank You.

Governance in the TTCAA

In accordance with the approved Corporate Plan for the period 2017-2020, one of the strategic priorities of the TTCAA is to strengthen the governance structure, through a robust Governance, Risk and Compliance Framework.

The Framework would consider:

- The strategic alignment and risk management within the TTCAA.
- The establishment of compliance programmes, structures and guidelines.
- Risk mitigation strategies.
- The monitoring and reporting of the governance, risk and compliance framework.

The current governance structure that is in place is managed through the collaboration of the Board, the Sub-Committees of the Board, the Corporate Secretary/ Legal Officer (CSLO) and the Internal Audit Department.

The CSLO has a dual role: the office assists management in achieving the operational goals of the company and, at the same time, provides corporate oversight. The CSLO office provides legal and compliance advice to all departments within the Authority and corporate secretarial duties for all Committees of the Board, the Pension Plan Management Committee and the Health and Safety Committee. The CSLO is also the Secretary of the Tenders Committee and oversees the procedural and governance issues for all tenders published by the Authority. The CSLO also provides

support to the Management Tenders Committee and complies with all requests arising from the various audit exercises conducted on the Authority.

As part of the facilitative function within the TTCAA, the CSLO negotiates and draft contracts.

Additionally, the Civil Aviation Act Chapter 49:03 and the Regulations made thereunder are constantly updated to be in line with the Standards and Recommended Practices (SARPS) which are passed annually by the International Civil Aviation Organisation (ICAO). Legal drafting is therefore another key function of the office.

TTCAA is also party to some High Court and Industrial Court actions and the management of these matters require due care and diligence from the office of the CSLO.

No governance structure would be complete without the assurance role of the Internal Audit Department. The Internal Audit Department continues to provide the Board and Management with an independent and objective evaluation on the adequacy and effectiveness of the internal control systems in the TTCAA, with the purpose of improving the organisation's risk management, control and governance processes. Based on the strategic priority of

strengthening the governance structure within the TTCAA, the strategies of the Internal Audit Department are to:

- To develop and implement approaches to governance, risk mitigation and control mechanism.
- To continuously improve the quality of all audit engagements

To ensure the enhancement of the governance structure, the Board has approved the implementation of an Enterprise Risk Management (ERM) programme aimed at:

- Inculcating an effective risk culture within the Authority.
- Establishing Risk Management Committees.
- Establishing and communicating a formalised ERM methodology.
- Developing a Risk Management Manual and Training Programme.

This project is scheduled to commence in fiscal 2018-2019. The aviation landscape in Trinidad and Tobago is unique and through the establishment of an effective Governance, Risk and Compliance Model, it is the intention of the Board and Management of the Authority to realise its objectives whilst maintaining the highest levels of accountability and integrity.



Corporate Secretary
Sandra Warner

Global Economic Review

The IMF revised upwards its global growth estimates for 2018 from 3.6% to 3.9% in their World Economic Outlook (July 2018 Update). Growth in advanced economies is expected to remain at 2.4% in 2018 with slightly slower growth of 2.2% in 2019. This amalgamated growth is uneven and represents growth in the United States of America as well as declines in the European area and Japan. Economic activity in emerging and developing economies is forecasted to continue its robust growth of 3.6% in 2018 and increase to 3.8% in 2019. The 2019 global growth forecast maintains the current level of 3.9%. This however is subject to negative surprises to economic activity such as rising oil prices, appreciation of the United States dollar, protectionist trade policies and escalating trade tensions.

Oil prices increased in 2018 due to the planned supply shortfall by the Organisation of Petroleum Exporting Countries (OPEC) and non-OPEC oil producers.

The average price of oil in the past fiscal year was US\$67/bbl (per barrel) West Texas Intermediate (WTI) compared to \$53/bbl the year before. Next year however, prices could decrease by as much as a 10% to about US\$58/bbl as supply increases. Conversely, it is also possible that oil prices can average US\$80/bbl if sanctions against Iran and Venezuela materialise and cause severe supply shortfalls. The increased price of oil this past year also

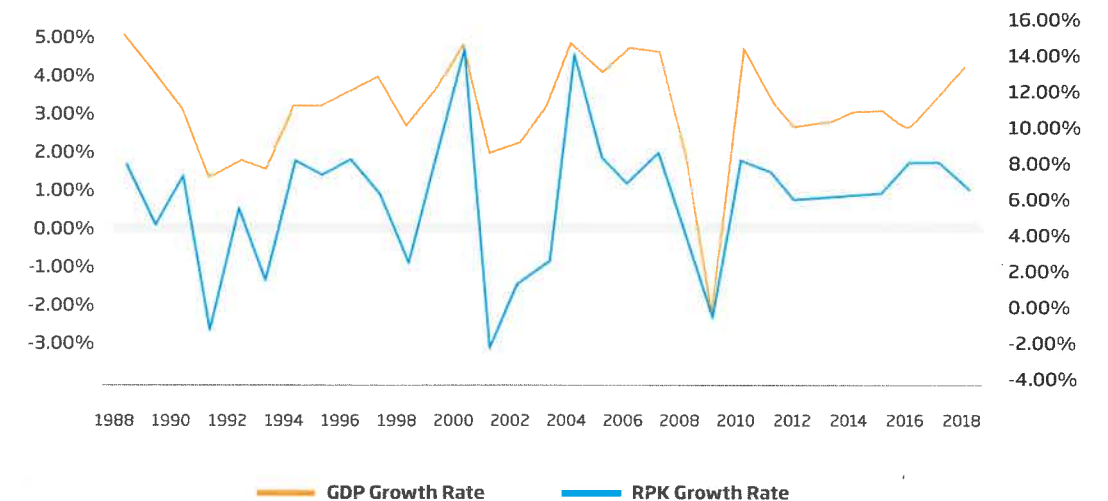
translated into higher jet fuel prices. Last year's average cost was US\$63.1 per barrel which increased this year to US\$86.6 per barrel. The International Air Transport Association (IATA) had first estimated the global airline fuel bill to be US\$168 billion in 2018. However, since prices rose above US\$2.00/gal for the first time in nearly four years, IATA has revised upwards the airline fuel bill to US\$188 billion which is approximately 25% of airlines' operating costs. In 2019, the average fuel price could be US\$1.85/gal to correspond to the possible decrease in crude oil prices or spike to US\$2.40/gal with a brewing supply outage.

Higher fuel prices combined with increased labour costs resulted in higher input costs in the airline industry in 2018. IATA states that airlines' fuel and labour costs increased by 26% and 8.3% respectively. With higher input costs, there was a reduced boost to demand from lower or promotional airfares in 2018. Nevertheless, a year-on-year comparison shows that the average base international return fare remained the same at US\$380. Global economic growth and somewhat stagnant fares saw the continuation of increasing passenger demand measured by Revenue Passenger Kilometres (RPKs).

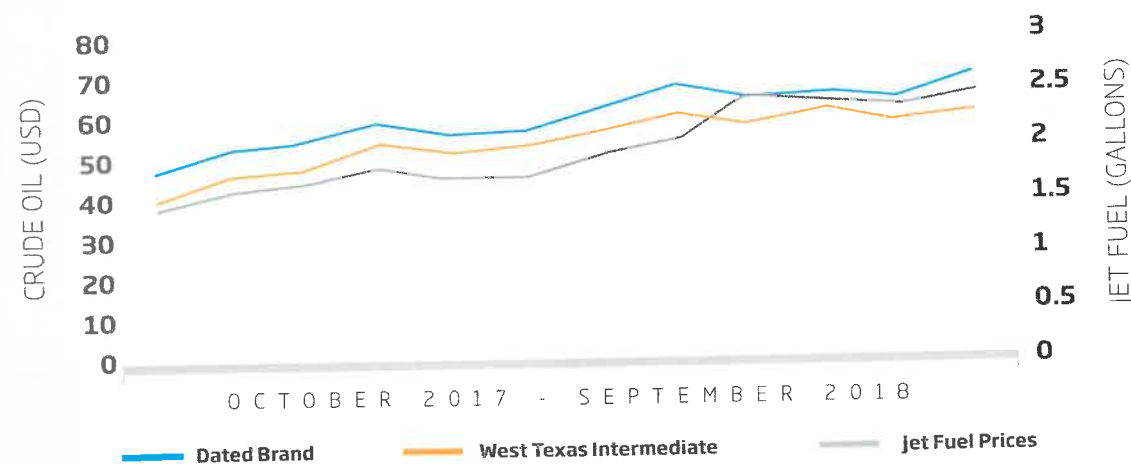
Although this increase was less than what was expected at the beginning of 2018 with ICAO originally forecasting an increase of 7%, the past fiscal year realised year-on-year growth of 6.15% RPKs. In 2017, there were 7.7 trillion RPKs

while in 2018 there were 8.17 trillion RPKs. In terms of passenger numbers, calendar year 2018 is expected to close with 4.36 billion passengers transported by air.

Annual Global RPK Growth Rate vs Global GDP Growth Rate



1-YEAR TREND OF CRUDE OIL & JET FUEL PRICES



With greater passenger demand in 2018, airlines increased the capacity offered by performing more flights. IATA claims that its members performed 38.7 million scheduled flights in 2018 compared to 36.8 million the previous year. These flights operated between 21,314 different city-pairs. This means that in 2018, the world's airlines operated nearly 1000 more routes than in 2017. Worldwide capacity, measured as available seat kilometres (ASKs), grew by 5.9%. Based on ICAO's statistics, capacity expansion has outpaced the growth in traffic and the outcome is an increase in average load factor of air operators. In 2017, the average load factor was 81.5% which slightly increased to 81.7% in 2018.

The increase of passenger demand impacts not only the aviation industry but extends to the tourism industry also.

According to the World Tourism Organisation (UNWTO), there were 1.323 billion international tourist arrivals in 2017 and the first half of 2018 saw an increase of 6%. Of these tourists, 57% or approximately 796 million tourists were transported by air with an estimated contribution of US\$794 billion to the tourism industry. The UNWTO also indicated that in 2017, approximately US\$787 billion were spent by consumers on air transport. In 2018, that figure increased by 10.67% to US\$871 billion. With possible lower oil and fuel prices expected in 2019 coupled with stable economic growth in advanced and emerging economies, Airports Council International (ACI) forecasts that 2019 will experience a 6% increase in the number of passengers flown worldwide. This is 1.4 percentage points higher than their compound annual growth rate for the period 2017-2040 and could result in 4.6 billion air transport passengers in 2019.

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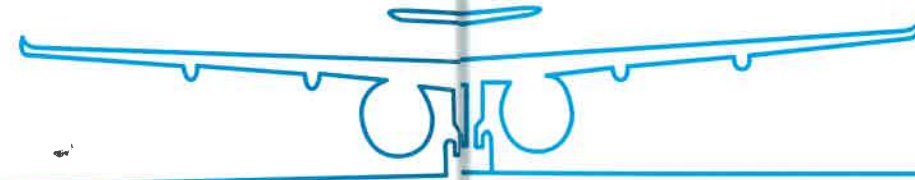
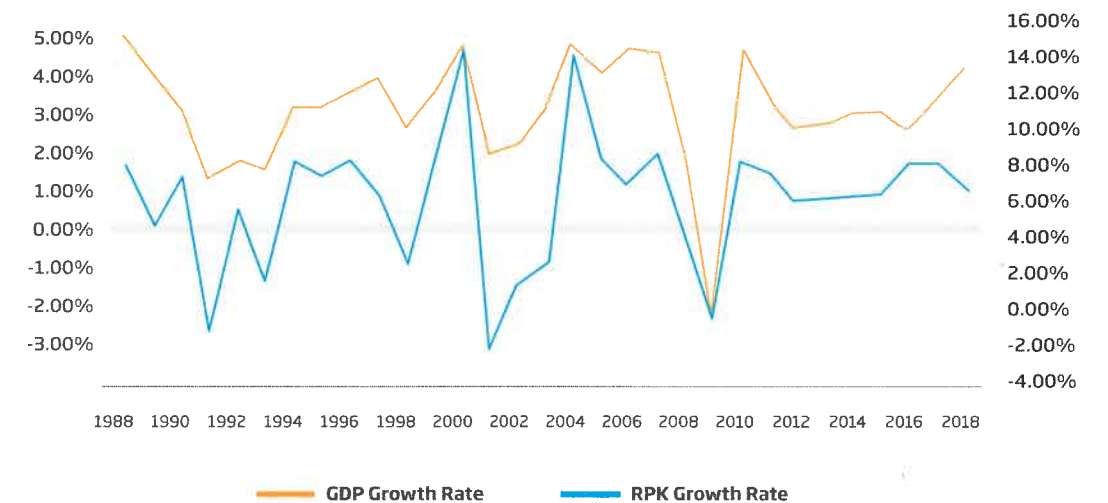
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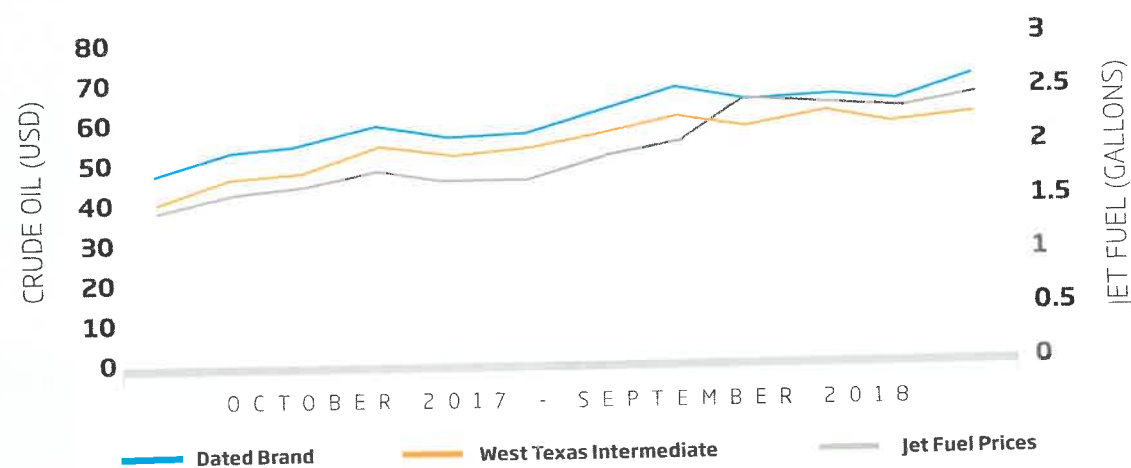
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The past fiscal year has also seen an increase in the amount of freight transported. As per ICAO, there was 5% more freight tonne kilometres (FTKs) than the previous year. Latin America/Caribbean continued to be one of the fastest growing regions for air cargo. Worldwide, 63.6 million tonnes of cargo were transported by air. This is 2.1 million tonnes more than 2017. IATA predicts that over 65 billion tonnes will be transported by air in 2019. In terms of tonnage, the cargo transported by air in 2018 represents 1% of the total volume of goods transported. In terms of value however, this 1% of goods transported by air represents 35% of the total value of all cargo transported. Although more freight was transported this year, the efficiency of the air cargo industry is still suffering. Notwithstanding a minor increase over 2017, the freight load factor for air cargo operators was 49.4%.

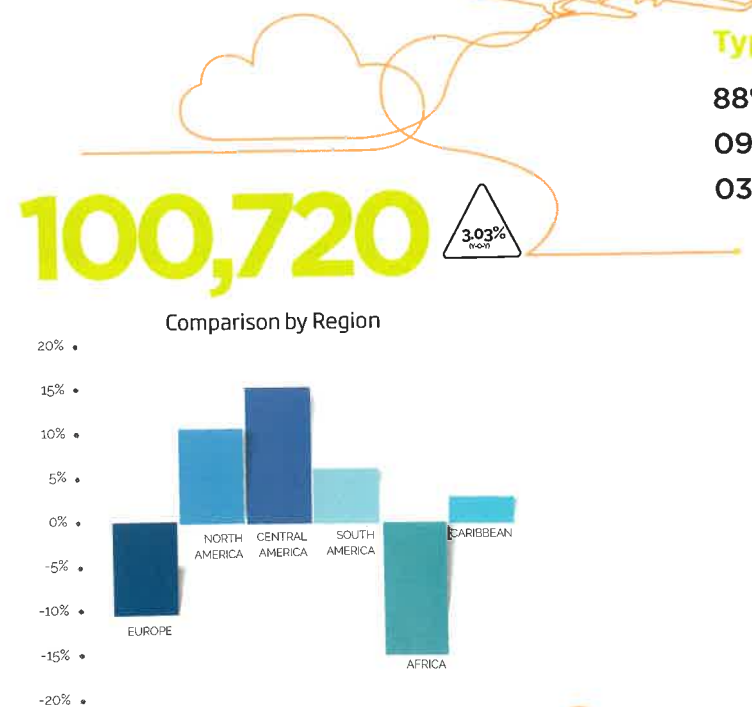
Given that the aviation industry is dynamic and subject to global macroeconomic factors, the TTCAA closely monitors such factors. Aviation trends are usually a reflection of the wider economic conditions and thus in order to fulfil its responsibility of providing efficient air navigation services in the Piarco FIR, the TTCAA analyses such data to enhance its planning and budgeting processes. The following depicts the level of activity within the FIR for the past fiscal year.

In 2017, the Caribbean region's aviation sector suffered greatly due to the Atlantic hurricane season. Three major hurricanes (Irma, Jose and Maria) disrupted air transport in the Caribbean during that year. Fortunately, in 2018 operations normalised and there were no severe weather-related disruptions. This year, there were 100,720 flights; 3% more than last year. This is the highest number of flights ever recorded to have flown within the Piarco FIR. This reflects the heightened levels of economic activity in the Latin American region, the Caribbean region and the North American region. Flights departing these regions to operate within the FIR increased by 7%, 2% and 12% respectively in 2018.

Given the forecasted robust economic growth from advanced and developing economies, as well as the expected growth in passenger demand forecasted by ICAO, the TTCAA anticipates that the number of flights operating in the Piarco FIR will increase. The TTCAA's forecasting model estimates that 101,047 flights will operate in the FIR in 2019. The revenue generating capacity is also expected to incur a minor increase by 0.73% next year.

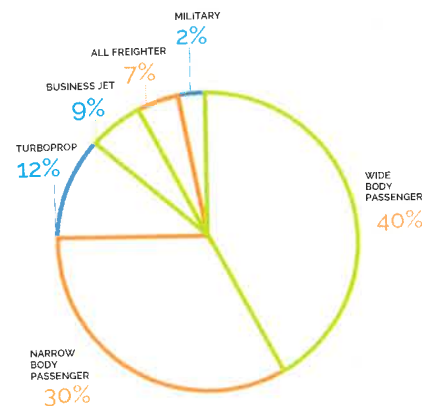
The aviation industry of Trinidad and Tobago however, has not shown growth in line with the worldwide industry. The data collected from the commercial air carriers that operate to/from Trinidad and Tobago

Y-O-Y Comparison by Region

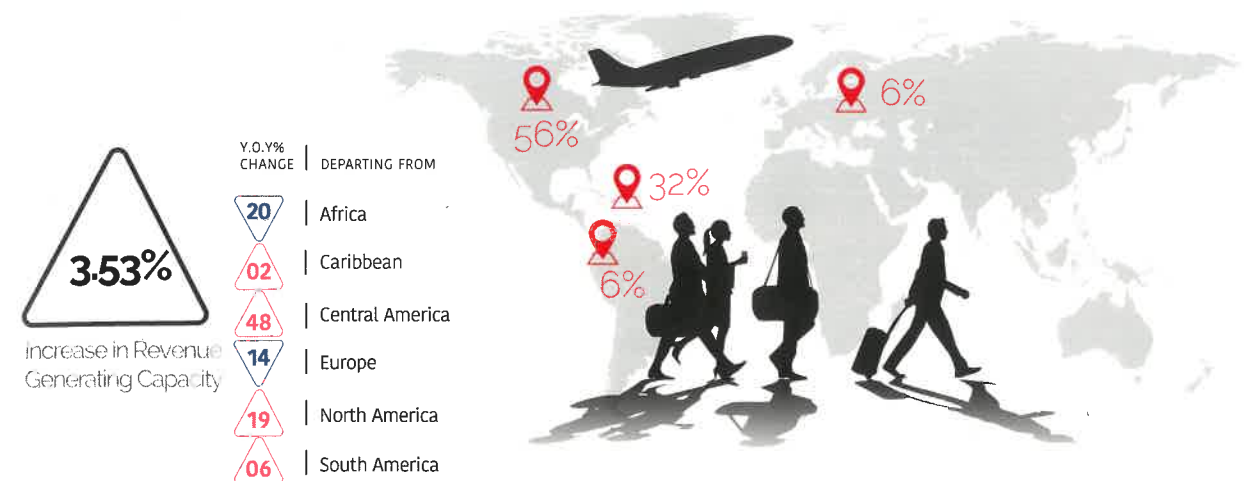


Types of Operations within the FIR

- 88% Civil (Passenger & Cargo)
- 09% General Aviation
- 03% Military



2018 Passenger Movement To/From T&T



3.53%
increase in Revenue
Generating Capacity

Top 5

in the Piarco FIR

- | AIRCRAFT | USERS (based on total distance travelled) |
|----------|---|
| 1 B738 | 1 Caribbean Airlines |
| 2 B763 | 2 American Airlines |
| 3 A332 | 3 Delta Airlines |
| 4 ATR72 | 4 TAM Linhas Aerea S.A. |
| 5 A320 | 5 Groupe Air France |

shows that there is a declining trend in the number of flights operated. The rate of decline over the past three years is 9.3%. During the first half of 2018, commercial airlines operated 14,998 flights - 8% less than the corresponding period in 2017. This decrease is entirely attributable to commercial flights to Trinidad as flights to/from Tobago increased by 4.6%. The decreasing number of flights to Trinidad is a result of airlines practising better capacity management and transporting more passengers per flight. This is evident in the fact that since 2015, average load factors have been increasing from 45% in 2015 to 58% in 2018.

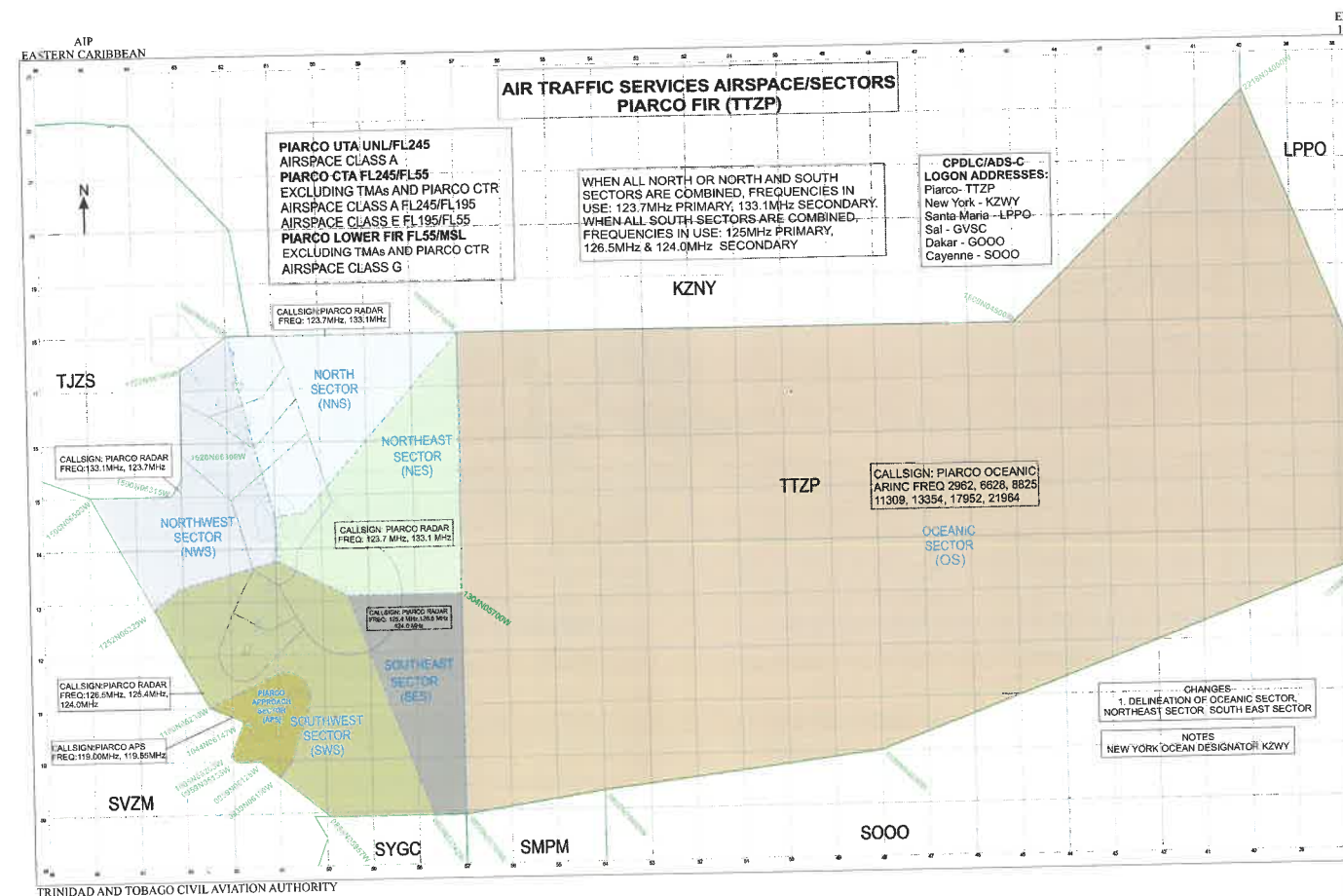
The number of passengers transported to/from Trinidad and Tobago in the first six months of 2018 was 967,987 - 0.24% higher than 2017 but 4% less than 2016. The majority of passenger movement continues to be between Trinidad and Tobago and North America although there was a 2.6% decrease this year. Commercial passenger operations from Tobago showed vast improvement with an increase in passenger movement of 21.3%. The TTCAA estimates an increase in overall passenger movement of 2% in 2019 over 2018. This is based on data collected and the trend from 2015-2018 and may be supported by the positive economic outlooks for all the regions from which flights to Trinidad and Tobago originate as well as the IMF's projection of minor economic growth for Trinidad and Tobago itself in 2019.

The air cargo industry and in particular, the outbound sector, also seem to be on a decline based on data

for the first half of 2018. This year, 4,195.3 tonnes were transported - 29% less than last year and the first time in four years that outbound cargo totalled less than 4,500 tonnes. Overall, 13,107.16 tonnes were transported by air freighters; a 9% year-on-year decrease. The load factors of these air freighters increased from 58% to 67%.

Although most indicators point towards growth in the aviation sector, sudden changes could cause shocks to the industry. The uncertainty as to whether oil prices will average higher or lower, geopolitical disputes and liberalised air transport agreements are all factors which can directly affect the aviation industry next year. The Authority will continue to closely monitor such macroeconomic factors to make informed decisions as they influence policy formulation, objective setting and short-term planning.

The Piarco Flight Information Region



TRINIDAD AND TOBAGO CIVIL AVIATION AUTHORITY

Trinidad and Tobago has **responsibility** for the provision of aviation services in an international airspace known as the **Piarco Flight Information Region (FIR)**.

The Piarco FIR is one of the largest in the region, consisting of 750,000 square miles. The Piarco FIR comprises a region that spans from 10° - 18° north latitude and approximately mid-Atlantic (37.5° west longitude) to 65° west longitude, with nine bordering FIRs.

Trinidad and Tobago is one of 192 states that is signatory to the Convention on International Civil Aviation, drafted in 1944 in Chicago, that was established to promote

co-operation and "create and preserve friendship and understanding among the nations and peoples of the world." Known more commonly today as the "Chicago Convention," this landmark agreement established the core principles permitting international transport by air, and led to the creation of the specialised agency which has overseen it ever since - the International Civil Aviation Organisation (ICAO).

In 1950, the Council of ICAO accepted the recommendations of the Second Caribbean Regional Air Navigation Committee, which deliberated and agreed on an Air Traffic Services scheme in the Caribbean Area. Under this "Havana Agreement," responsibility for the airspace above its territory and for the provision of Air Navigation Services within an airspace known as the Piarco FIR was delegated to the Government of Trinidad and Tobago. To manage this airspace, the Trinidad and Tobago Civil Aviation Authority operates two air traffic control towers

at our international airports and the Piarco Area Control Centre, which is a combined area and approach control unit. The TTCAA is responsible for providing Air Traffic Management and Communication, Navigation and Surveillance (ATM/CNS) services to all international flights traversing our airspace, many of which do not land in or depart from Trinidad and Tobago.

Over the last five years, the Piarco and ANR Robinson International airports collectively managed air traffic movements of more than 63,000 annually; while the Piarco Area Control Centre manages more than 99,000 aircraft movement, annually.

To meet these obligations Trinidad and Tobago is required to forge co-operative agreements with several international and regional states.

The TTCAA continues to support international aviation and maintain our obligations under the Chicago Convention through enhancements in aviation infrastructure, technology and human resource capacity to ensure that we are meeting the objectives of the Global Air Navigation and Global Aviation Safety Plans and developing the next generation of aviation safety professionals.

The TTCAA contributes to the effective and efficient management of aviation safety risks and continues to improve relationships with the wider aviation community. Our continued efforts ensure that we meet our international and regional targets to ensure the safety and security of the Piarco FIR and the local aviation industry.



AIR NAVIGATION SERVICES DIVISION



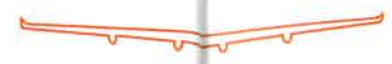
“ENSURING CONTINUOUS IMPROVEMENTS IN SAFETY, CAPACITY AND EFFICIENCY OF THE AIR NAVIGATION SERVICES OPERATIONS WITHIN THE PIARCO FLIGHT INFORMATION REGION”




ROHAN GARIB - EXECUTIVE MANAGER, AIR NAVIGATION SERVICES

STRATEGIC PRIORITY

IMPROVE SAFETY, CAPACITY, EFFICIENCY AND REDUCE THE IMPACT OF AIR TRANSPORT ON THE ENVIRONMENT WITHIN THE PIARCO FIR




 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
<p>To ensure the Piarco FIR is safe and secure.</p> <p>To attain regional safety targets as outlined in the ICAO Port of Spain Declaration.</p>	<ul style="list-style-type: none"> Enhance civil aviation safety in Trinidad and Tobago and the Piarco Flight Information Region (FIR) through the following measures: <ul style="list-style-type: none"> Identify and monitor existing types of safety risks in the provision of ANS. Develop and implement an effective Safety Management System (SMS) to respond to emerging risks. Ensure effective implementation and adherence to the TTCAA Regulations. Identify and develop remedial plans to target the root causes of deficiencies. Collaborate with stakeholders to identify hazards and mitigate risk. 	<ul style="list-style-type: none"> A Hazard Report Form was introduced. This revised reporting feature allows for the creation of a hazard database based on mandatory and voluntary reporting of hazards. The Safety Management System (SMS) Manual and Safety Policy were drafted. ANS safety personnel are continuously trained through ICAO Safety Management training programmes. The ISO 9001 certification was maintained within the AIM Department, including the upgrade to the ISO 9001:2015 standard. The Safety Regulation Department commenced the ANSP certification. Aeronautical Information for the Eastern Caribbean States, the British Virgin Islands and Anguilla were published as elements of the Integrated Aeronautical Information Package. The AIM Quality Management System focused on the implementation, maintenance and continual improvement of the Publications Procedures. Information in relation to safety has been shared with airlines and adjacent ATS Units enabling the ATS and ANS Safety Department to implement risk mitigation strategies.






STRATEGIC PRIORITY IMPROVE SAFETY, CAPACITY, EFFICIENCY AND REDUCE THE IMPACT OF AIR TRANSPORT ON THE ENVIRONMENT WITHIN THE PIARCO FIR		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
<p>An efficient, dynamic and flexible flight management system.</p>	<ul style="list-style-type: none"> Enhance the efficiency of ANS operations and personnel by addressing issues related to the improvement of Demand and Capacity. 	<p>ANS Planning and Development Department - ANSPD</p> <p>During the financial period 2017/2018, the ANS Planning and Development Department ensured that subject matter experts received training and participated in workshops and seminars required to maintain ratings and training targets in the various disciplines.</p> <p>Communication Navigation Surveillance Department</p> <p>Six CNS Technicians were trained on Radar Concepts and Fundamentals at the Federal Aviation Administration (FAA) Training Academy in Oklahoma City, USA.</p> <p>ATS and ANS Safety Department</p> <p>Nine air traffic controllers were successfully recruited and trained in Air Traffic Control. The Piarco Combine Area and Approach Control Unit also certified ten area controllers. The training capacity of the department has been enhanced with the endorsement of five air traffic instructors to meet the training requirements for the continued provision of air traffic control services within the Piarco FIR.</p> <p>A new roster system was implemented to reduce overtime costs.</p> <p>Aeronautical Information Management Department</p> <p>The Unit Chief, Supervisors and Officers attained training that pertained to the upgrade of the ISO 9001:2015 standard.</p> <p>The ANS AIM Geomatics Unit was introduced in the TTCAA Organisational Structure in response to the evolving demands of ICAO requirements and mandates within the Global Air Navigation Plan and Aviation System Block Upgrades. In the next fiscal period the Unit would continue to focus on Charting and Electronic Terrain and Obstacle Data (eTOD). Through extensive training initiatives and the exploration of technology, the Unit will assist in the promotion of safe and efficient services within the Piarco FIR.</p>

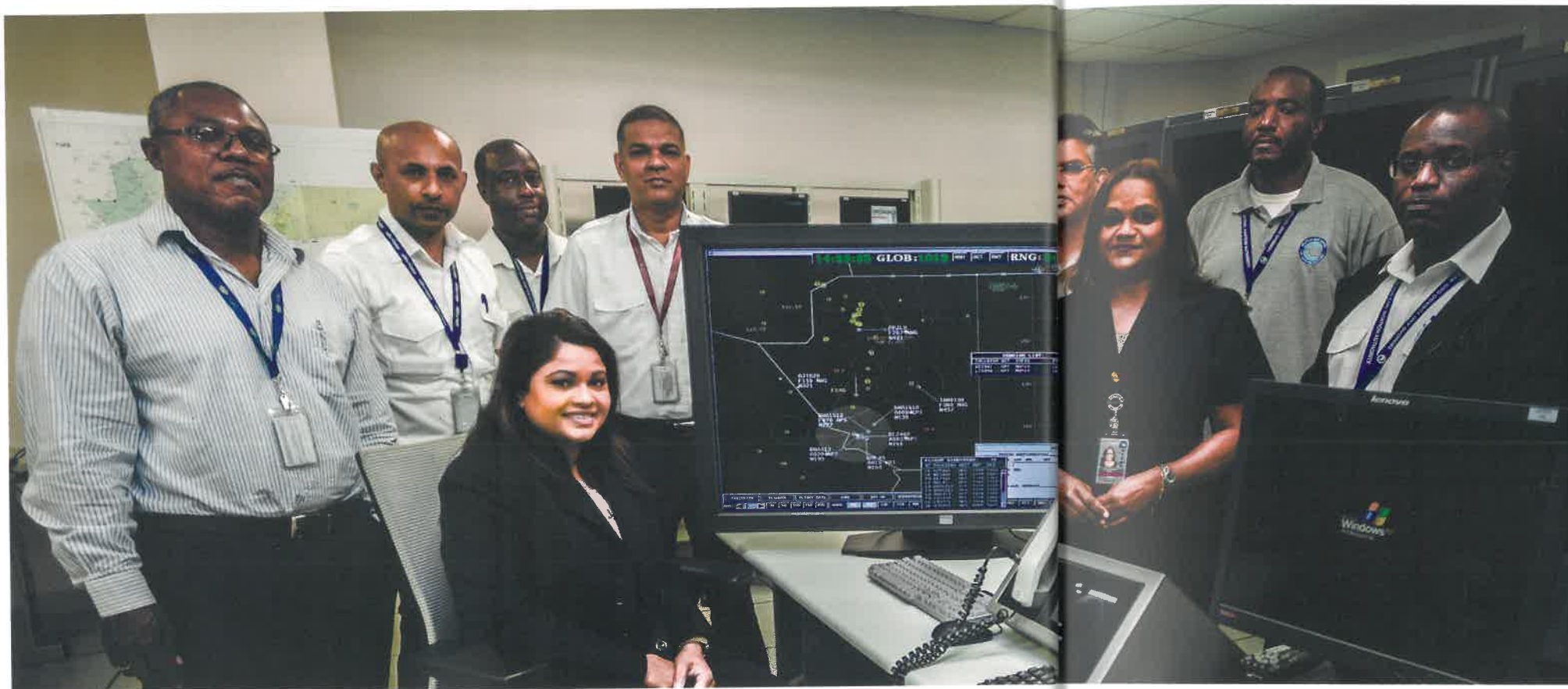
STRATEGIC PRIORITY MAINTAIN AND LEVERAGE DEVELOPMENT IN AIR NAVIGATION TECHNOLOGY		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
<p>Successful improvements and enhancements to all communication, navigation and surveillance infrastructure.</p>	<ul style="list-style-type: none"> Exploit existing and emerging technologies in an effort to improve aviation communication, navigation, surveillance and air traffic management within the Piarco FIR. 	<ul style="list-style-type: none"> The Upper Airspace of the Piarco FIR was reorganised. Four RNAV routes were implemented. The design and agreement for three additional RNAV routes are in progress. In August 2018, the International Civil Aviation Organisation (ICAO) Technical Co-operation Bureau (TCB) was contracted to prepare and finalise the technical specifications for the issuance of tender documents, the conduct of the tender evaluation, recommendations on the contract award and contract negotiations of the Automatic Dependent Surveillance. Broadcast (ADS-B) within continental air space and Wide Area Multilateration (WAM) in the south sector of the Piarco FIR. The upgrade of the Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) System commenced in May 2018. The upgrade includes replacement of the existing hardware and software including the displays, printers, recording system and aviation billing automation. The upgrade of the Aeronautical Message Handling System (AMHS) was successfully completed in July 2018.



STRATEGIC PRIORITY MAINTAIN AND LEVERAGE DEVELOPMENT IN AIR NAVIGATION TECHNOLOGY		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
Successful improvements and enhancements to all communication, navigation and surveillance infrastructure.	<ul style="list-style-type: none"> Implement air navigation technologies in accordance with the ICAO Port of Spain Declaration and the Aviation Systems Block Upgrade (ASBU) methodology. 	<p>Communication, Navigation and Surveillance Infrastructure</p> <p>The TTCAA and Cable and Wireless formalised an agreement for the rental of space and services at the Very High Frequency (VHF) radio sites on Antigua, Barbados and Saint Lucia. The VHF Aeronautical Mobile Service (AMS) network equipment provides critical voice communication between the aircraft and the Piarco Area Control Centre in Trinidad within the continental airspace in the Eastern Caribbean.</p> <p>Radio links which act as the medium to transport control and status information between the remote sites and the Control Towers in the Piarco and ANR Robinson Airports to the Instrument Landing System sites were replaced.</p> <p>Uninterruptible Power Supplies (UPS) at the navigational aids remote sites were replaced.</p> <p>Air Navigation Technologies</p> <p>Performance-Based Navigation - PBN one of the seven components of ATM is Airspace Management and Organisation (AOM). AOM involves the combination of an efficient airspace design and a system of procedures to effectively manage the airspace capacity while ensuring the highest levels of safety are maintained.</p> <p>In line with the ICAO's ASBU methodology, specifically "Improved Operations through Enhanced En-Route Trajectories," (Block 0 Module - FRT0), the Piarco ANSP has been conducting flexible routing trials with KLM Royal Dutch Airlines. Between November 9, 2017 and February 6, 2018, KLM reported approximate savings of 16,000 lbs of fuel, an average of 700 lbs of fuel per participating flight and a resultant total reduction of over 48,000 lbs of harmful carbon emissions. For the period February 7, 2018 to May 15, 2018, KLM has reported 8,600 lbs of saved fuel, an average of 233 lbs per flight.</p>

STRATEGIC PRIORITY MAINTAIN AND LEVERAGE DEVELOPMENT IN AIR NAVIGATION TECHNOLOGY		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
Successful improvements and enhancements to all communication, navigation and surveillance infrastructure.	<ul style="list-style-type: none"> Implement air navigation technologies in accordance with the ICAO Port of Spain Declaration and the Aviation Systems Block Upgrade (ASBU) methodology. 	<p>Air Traffic Flow Management - ATFM</p> <p>Complements PBN in the AOM process, ensuring a system management and maximising the airspace gains derived by PBN designs. ATFM services support ATS operations through the continuous provision of traffic projections and Collaborative Decision-Making (CDM) with adjacent ANSPs and airline stakeholders when required. ATFM services were extremely valuable during the passage of three major hurricanes in 2017 which resulted in airspace closures and numerous requirements for re-routings and implementation of various Traffic Management Measures (TMMs).</p> <p>On October 31, 2017, Trinidad and Tobago became the first International Data Provider (IDP) to officially connect to the Federal Aviation Administration (FAA) Traffic Flow Management System (TFMS) via the System Wide Information Management (SWIM) system, allowing the publishing ICAO Flight Plan, Departure, Arrival, and Track messages. The TTCAA received many congratulatory remarks from various stakeholders within the region for this historic achievement.</p> <p>The benefits of this data transfer for ANSPs, as well as the aviation stakeholders will be tremendous. Information will be available for ATM to make instantaneous decisions based on dynamic situations to continue to ensure safety. The initiative will also improve efficiency and the aviation-related carbon footprint.</p> <p>This is a significant accomplishment and provides the platform for future growth into the area of increased interoperability, efficiency and capacity through ground-ground integration.</p>

CNS/ATM System Upgrade



In accordance with the implementation of the Performance-Based Navigation (PBN) Airspace Concept, supported by the ICAO Global Air Traffic Management (ATM) Operational Concept and the Regional Performance-Based Air Navigation Implementation Plan (RPBANIP), the Trinidad and Tobago Civil Aviation Authority (TTCAA) embarked upon a Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Automation modernisation project in 2006.

The open tendering process was followed by an extensive evaluation and based on this evaluation, SELEX Sistemi Integrati SpA (SI) of Italy was selected and was awarded a contract to design, supply, instal and commission a CNS/ATM Automation System. The company changed its name to Leonardo S.p.A. on January 1, 2017, after the Italian inventor Leonardo Da Vinci. The Leonardo brand defines the change of the company and its transformation from a financial holding company to an operational, integrated and innovative industrial entity.

The system allowed the TTCAA an ATM capability with a high level of automation, providing improved situational awareness and efficient Air Traffic Service (ATS) provision and airspace management service to users and stakeholders. The ATM system comprises radar surveillance utilising radar data emanating from the Radar Head in Trinidad and Multi-Radar Tracking (MRT) data from the French Antilles (Martinique and Guadeloupe), with capability of accepting additional surveillance inputs from other radar heads and sensors, for example, Automatic Dependent Service – Broadcast (ADS-B) and Contract (ADS-C). The system provides increased surveillance with conflict detection complemented with additional air/ground communications, Very High Frequency (VHF) radio equipment and an ATC radar simulator.

Following the successful completion of a safety assessment period accomplished through operational trials in a live environment from 2010 to 2011, the CNS/ATM system became operational in July 2012. In accordance with

the strategic objectives of the Global Air Navigation Plan (GANP) and the Aviation System Block Upgrades (ASBU), specifically, the RPBANIP, which establishes the NAM/CAR regional priorities described as Regional Performance Objectives (RPO) which are aligned to the global air navigation priorities and agreed regional performance-based metrics, the TTCAA entered into an upgrade of the CNS/ATM System in 2014.

Given the condition of the existing system and the complexities of adapting/customising such a system to the peculiarities of the Piarco Flight Information Region (FIR), Leonardo S.p.A. was deemed best qualified to execute the project as a result of the previous experience of the company. The contract was awarded on a sole selective basis in accordance with the Civil Aviation (Tenders Committee) Rules and was approved by the Board of the TTCAA. The Director of Contracts concurred with the award of the contract to Leonardo S.p.A. for the upgrade of the CNS/ATM System. On March 28, 2018, the TTCAA received approval from the Ministry to commence the upgrade project. Further to an independent evaluation of upgrade

proposal, ICAO stated that the upgrade and customisation of the Piarco CNS/ATM system is in alignment with the Regional e-ANP and ICAO's ASBU methodology and that the submission by Leonardo is technically and financially reasonable and competitive.

A contract was signed with Leonardo S.p.A on 25 May 2018 for the provision of hardware and software to upgrade the existing CNS/ATM System. In addition to the hardware upgrade and the new software baseline, the deliverables include a Software Maintenance Service Level Agreement (SLA) for five years, 24/7 support, extended warranty on voice communication and control (VCCS) hardware, technical and operational training and provision of spare parts.

From the Air Traffic Management perspective, the upgrade will provide air traffic controllers with an upgraded modern human machine interface customised for the local environment. The upgrade provides fixes for several issues that previously required air traffic controllers to develop work arounds; these issues added complexity and increased workload, thereby compromising safety. Human factor studies have been applied within the baseline software to enhance the system. This would allow for the upgrade to be more user friendly with an intuitive interface to augment the safety and proficiency of the air traffic controllers in the execution of their functions. The upgrade will also provide an interface specifically designed for use in the air traffic control towers allowing for more use of automation rather than manual inputs. Additionally, specific contingency scenarios were customised for the local environment.

An internal team comprising members from Air Traffic Services (ATS) and Air Navigation Services (ANS) Safety, CNS, and ANS Planning and Development (P&D), Aeronautical Information Management (AIM) and Information Technology (IT) was established to review the software customisation, the system design documents, training, installation, configuration, risk management, project management and transition plans, master test plan and acceptance procedures.

A technical contingent of six persons visited Leonardo's in Rome, Italy in September 2018 and met with the software designers and engineers to agree on the human-machine interface (HMI) and software customisation requirements. The final sign-off on the customisation is expected to be completed in Trinidad by the close of 2018. The project has an anticipated completion date of July 2019.

Tobago Highlights

The operations at the Air Traffic Control (ATC) Tower in Tobago contributes significantly to the overall success of the TTCAA. During the fiscal year, several initiatives were undertaken which focused on the further development of the operations at the Tobago ATC Tower.

RECRUITMENT



In 2012, the TTCAA began its drive to recruit a full cadre of Air Traffic Controllers that were residents to the island of Tobago, to manage the operations at the Tobago Tower. History was made in 2013 when two Tobagonians were successfully trained and certified as Aerodrome Air Traffic Controllers (ATCs). To date, the TTCAA has increased the Tobago operations by the addition of 14 Air Traffic Controllers, all residents of Tobago, four of whom were recruited during this fiscal period.

INSTALLATION OF A FIRE SUPPRESSION SYSTEM

The TTCAA provides tower services from the Air Traffic Control Tower at the ANR Robinson International Airport and the tower is maintained exclusively by the Authority. The tower is equipped with a fire detection and alarm system. In 2018, a decision was taken by Management to instal a fire suppression system to protect the staff and the air navigation equipment in the event of a fire. The project commenced in September 2018 and is scheduled to be completed by December 2018.

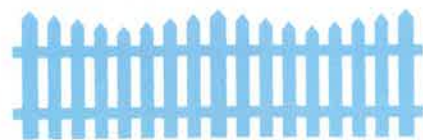


REMEDIAL WORKS TO THE EXTERNAL OF THE TOWER CAB

The ATC Tower in Tobago is located in close proximity to the coastline at Crown Point and is prone to marine corrosion. Following a maintenance inspection of the external structure of the Tower Cab, a decision was taken to conduct remedial works to avoid further corrosion and structural damage of the Tower Cab. Consultations were held between the TTCAA and Industrial Marine Sales for the development of a suitable protective coating that would yield a minimum of four to five years of protection to the steel surfaces. It was recommended that the coating system employed on BP offshore facilities be utilised for the Tower Cab. A scope was developed and the remedial work was completed to satisfaction within the fiscal period.



FENCING WORKS AT THE NON-DIRECTIONAL BEACON (NDB) TOBAGO



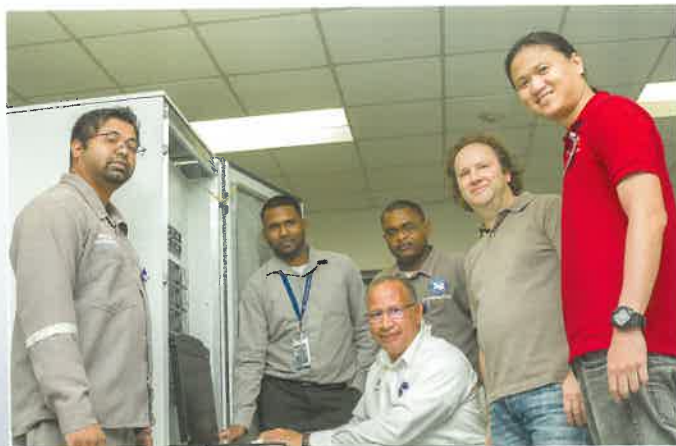
The TTCAA operates a Non-Directional Beacon (NDB) in Tobago for the provision of Air Navigation Services to the airlines. This facility was commissioned in 2007 and the NDB is situated to the south of the runway. The perimeter fence was replaced within the fiscal period as part of the preventative maintenance programme for the safeguarding of the capital assets of the Authority.





Upgrade of the T&T Aeronautical Message Handling System (AMHS)

THE AERONAUTICAL MESSAGE HANDLING SYSTEM (AMHS) ALSO KNOWN AS THE AIR TRAFFIC SERVICES (ATS) MESSAGE HANDLING SYSTEM IS A STANDARD FOR AERONAUTICAL GROUND-GROUND COMMUNICATIONS FOR THE TRANSMISSION OF NOTAM, FLIGHT PLANS OR METEOROLOGICAL DATA BASED ON X.400 ELECTRONIC MAIL EXCHANGE AND NAME LOOKUP PROFILES.



Onsite activities for the TCA from Frequentis Comsoft were conducted between 25 June 2018 and 06 July 2018. The successful completion of the site acceptance and the full transition to the new hardware and software were seamlessly achieved through the excellent support throughout all the project stages. This has again proven the remarkably good co-operation between customer and supplier amongst its project management, engineers and operators.

In a previous project in 2012, the German supplier Comsoft had already delivered the AMHS called Aeronautical Integrated Data Exchange Agent

- Next Generation (AIDA-NG) with the other products namely, Comsoft Aeronautical Data Access System - Air Traffic Services (CADAS-ATS) for Flight Planning and flight plan related messages, Comsoft Configuration Management Suite (CCMS), the directory server CADIR and an Email/FAX gateway (EFG). This allowed TCA to provide capabilities to operate the AMHS. Subsequently, the interregional AMHS connection between Piarco (Trinidad and Tobago) and Atlanta (United States) was successfully established. The upgrade in 2018 consisted of a complete midlife upgrade covering both hardware and applications to the latest versions with additional software features. This provides higher assurance of continuous operation of the ground-ground messaging system in the region. The hardware upgrade included new servers from the Hewlett Packard current server generation (Gen9), upgrade of the AMHS components at Piarco (Operator Working Positions/User Agent terminals, monitors, dot matrix printers) and hardware upgrade of the AMHS User Agents (UA) on the E/CAR States (UA terminals, monitors, dot matrix printers). The operating system was upgraded to Scientific Linux 6.6 in 64-bit technology and upgrade of the CCMS, AIDA-NG, CADAS-ATS/CADIR and EFG to the latest available releases. Comsoft Aeronautical Telecommunications Network (ATN) Directory Server (CADIR) is the core component of the X.500 directory solution for implementing a global directory service in the Air Traffic Management domain.

AIDA-NG, Frequentis Comsoft's advanced and fully integrated AMHS message switching system with a unified system management provides fully integrated and uniform message handling facilities. The system includes efficient queue handling and tracing for all connected networks with the benefits of a harmonised supervision and message handling thanks to the unified Human Machine Interface which allows operators to supervise the system and handle all messages with the same operating philosophy for all components, irrespective of the message type. Standard table-based routing functions are accomplished through the ability to copy,

divert and pause messages. Pending messages in outgoing queues can be monitored online (per circuit), accessed directly and rerouted or redirected to other destinations. AIDA-NG systems have been tested and approved to switch a permanent load of more than 900 messages per second. High message loads do not affect the exceptional response time of the Operator Working Positions. Overload situations are prevented by extensive flow control mechanisms. The AMHS is supported by a standard service package and software perfective maintenance Service Level Agreement up to October 2023.

One of the main challenges in the final stages of the project was to assure that both old and new CADAS-ATS terminals could be connected without any problems and that the exchange of hardware should be completed with little or no downtime. In this regard, a very precise migration plan was worked out to be used as a guideline for the onsite activities.

The new servers were prepared both for Site Acceptance Tests (SATs) and migration including system components. The SATs were successfully completed. Intensive testing was performed in order to ensure that the existing CADAS terminals (connected via the Eastern Caribbean Aeronautical Fixed Services (E/CAR/AFS) Network on the remote stations) could continue to operate with the new AIDA-NG and CADAS-ATS servers in Trinidad. Current operational parameters and some traffic data were also imported to the new system to enable a smooth transition for the users.

The transition was accomplished in the onsite activities. The new hardware was properly installed in the existing cabinets and all cabling was done.

Special emphasis was put on monitoring of the new system and introducing the Aeronautical Information Management (AIM) and Communication Navigation Surveillance (CNS) staff to the new features of the applications. Furthermore, two old servers were configured for training purposes of AIDA-NG and CADAS-ATS.




SAFETY REGULATION DIVISION



“ENHANCING THE REGULATORY OVERSIGHT OF CIVIL AVIATION IN TRINIDAD AND TOBAGO”

KINGSLEY HERREIRA - EXECUTIVE MANAGER, SAFETY REGULATION DIVISION

STRATEGIC PRIORITY IMPROVE THE REGULATORY FRAMEWORK

 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
<p>Prompt amendments to the regulatory framework to enhance the governance structure of the local civil aviation sector.</p>	<ul style="list-style-type: none"> Review, evaluate, and propose amendments to the regulatory framework with emphasis on the TCAA Act 11 of 2001, the Trinidad and Tobago Civil Aviation Regulations (TTCARs), policies and procedures. Develop action plans outlining the gaps in the regulatory framework and areas of priorities for amendments. 	<ul style="list-style-type: none"> The regulatory framework is continuously reviewed in accordance with the International Civil Aviation Organisation (ICAO) Standards and Recommended Practices. Amendments to the TTCARs have been submitted to the Ministry and the Chief Parliamentary Counsel for review. This initiative is monitored on an ongoing basis. Action plans are developed to monitor gaps based on amendments of the ICAO Annexes and through the ICAO audit process.

STRATEGIC PRIORITY SUSTAIN AN OPTIMUM STANDARD FOR SAFETY AND SECURITY IN THE CIVIL AVIATION SECTOR

 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
<p>The successful implementation of the state Safety Plan and Safety Management System across all safety related disciplines within the sector.</p> <p>A secure air transport system in Trinidad and Tobago with no major security incidents.</p>	<ul style="list-style-type: none"> Deliver the highest level of safety performance within Trinidad and Tobago. Deliver the highest level of aviation security and facilitation performance within Trinidad and Tobago. 	<ul style="list-style-type: none"> The TCAA continues to maintain a Safety Oversight System that meets all the requirement of the ICAO.

STRATEGIC PRIORITY RECRUIT, TRAIN AND DEVELOP A CADRE OF REGULATORY PERSONNEL		
STRATEGIC OBJECTIVES	STRATEGIC INITIATIVES	ACHIEVEMENT FOR FISCAL YEAR 2017/18
To foster and promote the development of high performing regulatory personnel ensuring that competent successors are identified for key positions within the Regulatory Division.	<ul style="list-style-type: none"> Identify the key areas and positions along with relevant capabilities and competencies that are critical to the operational activities and the attainment of strategic objectives. Establish a successful succession planning strategy. 	<ul style="list-style-type: none"> In accordance with the requirements of the State Safety Oversight System, the Safety Regulation Division does continuous assessment of the resources required to maintain a level of safety that meet the requirements of the ICAO. The establishment of a Succession Planning and Management System is being developed.





STRATEGIC PRIORITY IMPLEMENT EFFECTIVE ENFORCEMENT PROGRAMMES TO SECURE COMPLIANCE WITH AVIATION SAFETY STANDARDS		
STRATEGIC OBJECTIVES	STRATEGIC INITIATIVES	ACHIEVEMENT FOR FISCAL YEAR 2017/18
To promote compliance with aviation in Trinidad and Tobago and in the Piarco Flight Information Region.	<ul style="list-style-type: none"> Conduct inspection and surveillance activities with due diligence in a timely manner, detect and resolve possible violations of the local regulations. Employ preventative action programmes to reduce violations and promote voluntary compliance through education, licensing and certification, public notifications, consultation with industry, routine inspections/ surveillance and field operations. Effectively determine and impose penalties when the evidence indicates an individual or air operator is in violation of aviation regulations. 	<ul style="list-style-type: none"> Inspection and surveillance activities are conducted in accordance with surveillance plans. The plan is reviewed periodically to ensure relevance. This initiative is an ongoing process. Enforcement actions are applied in accordance with the Trinidad and Tobago Civil Aviation Regulations (TTCARs) and the Inspector Guidance Manual System (IGMS).





CORPORATE SERVICES DIVISION









“STRENGTHENING THE SUPPORT SERVICES AND BEING A COHESIVE, RESULTS-DRIVEN ORGANISATION”





NIRVANA GABRIEL - EXECUTIVE MANAGER, CORPORATE SERVICES (AG.)





STRATEGIC PRIORITY STRENGTHEN THE GOVERNANCE STRUCTURE WITHIN THE TTCAA		
INTERNAL AUDIT DEPARTMENT (IAD)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To establish an effective governance, risk and compliance model for the TTCAA.</p>	<ul style="list-style-type: none"> Collate the cache of governance documents and make efforts to promote accountability and transparency in the TTCAA. Provide Executive Management with a formalised risk management methodology. Develop an annual Internal Audit Plan that is based on the risk assessments for key areas. Develop an Internal Audit Manual. Conduct detailed reviews of the quality of services provided by the Internal Audit Department. Ensure that the audit working papers are complete, concise and accurately support the conclusions derived. 	<ul style="list-style-type: none"> The IAD collated key circulars, guidance documents and Board-approved departmental manuals relevant to the governance of the Authority. These documents provide insight and value added guidance when conducting audit engagement within the TTCAA. A preliminary audit risk assessment and planning methodology was accomplished. This will be followed by the development of a Risk Register to assess and monitor risk factors. The Annual Internal Audit Plan was finalised and approved and is continuously monitored by the Internal Audit Department. In order to strengthen the TTCAA's control framework an Internal Audit Manual was developed, approved by the Board and was implemented. The assessment of the Internal Audit Activity by internal and external assessors is outstanding. Special emphasis will be placed on the achievement of this initiative by the next fiscal year. A thorough review of audit working papers is performed by the Manager Internal Audit to ensure all audit recommendations are supported by accurately documented audit conclusions, based on the evidence reviewed by the Internal Audit Activity.





STRATEGIC PRIORITY PROVIDE SOUND ECONOMIC OVERSIGHT WITHIN THE LOCAL AVIATION INDUSTRY THROUGH FACILITATION AND ENCOURAGING ECONOMIC DEVELOPMENT		
DEPARTMENT OF AIR TRANSPORT AND ECONOMIC REGULATIONS (DATER)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To facilitate the economic sustainability of the aviation industry in Trinidad and Tobago.</p>	<ul style="list-style-type: none"> To adequately train and develop air transport economic regulation personnel. Continuously improve the process of reviewing applications for Commercial Air Transport Licences and Permits from air operators within Trinidad and Tobago. Conduct oversight of commercial air operators to ensure compliance with national laws as well as passenger protection. Maintain statistical databases and utilise the data collected for the preparation of statistical reports and decision-making. Provide economic oversight of the Air Navigation Service Provider by verifying monthly billing data and reviewing the Unit Rate applied to Enroute User Charges. 	<ul style="list-style-type: none"> DATER personnel were trained in: <ul style="list-style-type: none"> Aircraft Accident Investigation Air Transport Economics and Regulation (ICAO) Air Transport Forecasting Course (ICAO) For the period Sept 2017 - Aug 2018, the DATER achieved the following: <ul style="list-style-type: none"> 672 Commercial Air Transport Permits issued. TTD \$1,134,517.50 of revenue generated from issuing/ revising Permits. 19 Commercial Air Transport Licences were issued. TTD \$750,960 of revenue generated from issuing/revising Licences. 83 different air operators granted approvals (57 Passenger Operators; 17 Cargo Operators and 09 Air Ambulance Operators). During the past fiscal year, the DATER conducted a number of inspections. Special attention was paid to commercial air operators conducting charter flights. In February 2018, the DATER published its first Statistical Report on International Commercial Air Transport for Trinidad and Tobago which captured data for the calendar year 2017. The report was shared with all internal and external stakeholders. The Manager of the DATER chairs an Internal Committee that was established by the Director General in January 2018 to identify the full cost of providing air navigation services at its various stages, i.e., Area, Approach, Aerodrome for the period 2018/2019 - 2022/2023. The Committee is in the process of reviewing the Unit Rate required to recover these projected costs. <p>The Department has continued initiatives in the development of forecasting models to project traffic units within the Piarco FIR which would impact on the future unit rate.</p>





STRATEGIC PRIORITY		
PROVIDE SOUND ECONOMIC OVERSIGHT WITHIN THE LOCAL AVIATION INDUSTRY THROUGH FACILITATION AND ENCOURAGING ECONOMIC DEVELOPMENT		
DEPARTMENT OF AIR TRANSPORT AND ECONOMIC REGULATIONS (DATER)		
STRATEGIC OBJECTIVES	STRATEGIC INITIATIVES	ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To facilitate the economic sustainability of the aviation industry in Trinidad and Tobago.</p>	 <ul style="list-style-type: none"> Recommend amendments to relevant Trinidad and Tobago Civil Aviation Regulations (TTCARs) to maintain a sufficient and effective legal framework for the operations of the DATER. Conduct periodic economic reviews of the global economy and the aviation industry. 	 <ul style="list-style-type: none"> The DATER has made recommendations to the Director General of Civil Aviation (DGCA) for amendments to the Civil Aviation Act. Key areas of TTCAR 17 have been identified for amendment as the regulation directly impacts the operations. The DATER composes economic reports on the aviation industry which is submitted to the DGCA and disseminated to the management of the TTCAA. These reports take the form of quarterly and annual newsletters which were published by the department.





STRATEGIC PRIORITY		
ENSURE THE HIGHEST STANDARDS OF ACCOUNTABILITY, TRANSPARENCY AND PROBITY OF THE TTCAA'S FINANCIAL SYSTEMS		
FINANCE AND ACCOUNTING DEPARTMENT (FAD) AND CORPORATE PLANNING DEPARTMENT (CPD)		
STRATEGIC OBJECTIVES	STRATEGIC INITIATIVES	ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To secure the financial viability of the Authority by ensuring the highest standards of accountability, probity and financial control.</p>	 <p>Prioritise and align resources to the strategic activities by actively monitoring the economic and funding environment and objectively appraising the short- and long-term financial implications of all major decisions.</p> <p>Secure and manage the funds to support investments in infrastructure and the development of new sustainable activities.</p>	 <ul style="list-style-type: none"> In the current economic environment, it is imperative that the Board and Executive utilise key financial reports and projections to improve strategic decision and sustain superior financial performance. In 2017/ 2018, the Finance and Accounting Department in conjunction with the Corporate Planning Department engaged in financial analysis and planning programmes to ensure the availability of the financial resources to meet the strategic priorities of the TTCAA as outlined in the Corporate Plan. <p>The financial analysis and planning programmes focused on:</p> <ul style="list-style-type: none"> Outlining the company's financial direction and expectations for the next three to five years. Revolutionising the budgeting process through the vigorous monitoring of recurrent and capital expenditures. Forecasting historical data to predict financial outcomes for future years. Revising and updating the presentation and financial reporting to the Board and the Executive in relation to the financial position, performance and changes in financial position of the TTCAA for enhanced economic decision making. <ul style="list-style-type: none"> The Finance and Accounting Department consistently reviewed the financial data and provided financial support to the Executive in relation to the viability of new investments. In the upcoming fiscal year, the Finance and Accounting Department is committed to continuing initiatives in relation to reviewing the rates for the services provided by the TTCAA and additional portfolio investments.





STRATEGIC PRIORITY ENSURE THE HIGHEST STANDARDS OF ACCOUNTABILITY, TRANSPARENCY AND PROBITY OF THE TTCAA'S FINANCIAL SYSTEMS		
FINANCE AND ACCOUNTING DEPARTMENT (FAD) AND CORPORATE PLANNING DEPARTMENT (CPD)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To secure the financial viability of the Authority by ensuring the highest standards of accountability, probity and financial control.</p>	<ul style="list-style-type: none"> Maintain a comprehensive and effective risk management assurance framework and closely monitor the major financial risks to the Authority. Periodically review and update the financial strategy and undertake an annual assessment of financial sustainability. Maintain the balance between recurrent and capital expenditure. Manage costs and efficiencies in the delivery of all activities. Engage external auditors to critically review the financial systems of the Authority for financial statement finalisation. 	<ul style="list-style-type: none"> In the upcoming fiscal year, the TTCAA will embark on an enterprise risk management initiative which will also encompass a comprehensive assessment of the financial risk management systems and processes. The end objective of the financial risk assessment venture is to ensure that the major financial risk exposures of the TTCAA are identified and properly managed. The economic environment directly impacts the financial strategy employed within the TTCAA. With financial sustainability as one of our major focus areas, the Finance and Accounting Department worked closely with key internal stakeholders from our Air Navigation Services Division, Safety Regulation Division and Corporate Services Division in the assessment of the strategic position of the TTCAA and the financial resources required to execute our strategies. With the enhancement of the budgeting processes, it is the objective of the Corporate Planning Department and the Finance and Accounting Department to properly apply the expenditure of the TTCAA in accordance with established cost centres. The project is currently ongoing and when fully established, the result will be proper alignment of strategic goals and objectives to projected recurrent and capital expenditure by Division. Thereafter the actual expenditure incurred by each Division will be closely monitored and managed. The Finance and Accounting Department continuously ensures that the costs were appropriately managed. The TTCAA is committed to ensuring that the financial systems employed can withstand scrutiny and has embarked on several audit projects to ensure that this is maintained.





STRATEGIC PRIORITY CONTINUE TO DEVELOP THE TTCAA'S HUMAN RESOURCES & RE-ENGINEERING PROCESS		
HUMAN RESOURCES DEPARTMENT (HR)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To be the driver of innovation, productivity and growth through mobilising the workforce towards excellence and improving our systems and processes.</p>	<ul style="list-style-type: none"> Focus on total redesign of processes with the involvement of all internal constituents. Invest in continuous training and development of employees. Ensure performance management processes are designed and executed to align and maximise employees' performance with the goals of the TTCAA. 	<ul style="list-style-type: none"> Performance management processes were designed and executed to align and maximise employees' performance with the goals of the TTCAA through the following: <ul style="list-style-type: none"> The revision of the Performance Appraisal Form The review of departmental structures The revision of the pay change advice form and maintenance of an electronic database. The update of all employees' records electronically The roll-out of the electronic leave administration (Share Point) The TTCAA invested extensively in the training and development of its human resource capital. These training initiatives allowed for the acquisition of knowledge, skills and abilities required for effective job performance. The training and development initiatives mainly focused on: <ul style="list-style-type: none"> Airplane Proficiency Programmes Runway Incursion Prevention Conflict Management and Emotional Intelligence Employment Law Fundamentals: Management's Rights & Responsibilities Defensive Driving Training ICAO Training Instructor Courses Part 1 and 2 Radar Concepts and Fundamentals Professional Skills for Executive Secretaries and Personal Assistants From Managers to Leaders Course Recurrent Pilot Training Electronic Records Management A Committee was established to review the Human Resource Policy Manual to ensure that the HR policies address the TTCAA's mission and goals, changing workforce trends, economic conditions and legislation.





STRATEGIC PRIORITY ENHANCE TEAM BUILDING & CONTINUE TO IMPROVE INTERNAL COMMUNICATION INITIATIVES		
HUMAN RESOURCES DEPARTMENT (HR)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 To be a more collaborative motivated workforce that supports the strategic initiatives, vision and mission of the Authority	<ul style="list-style-type: none"> Build effective cross-functional work teams based on the principles of loyalty and trust. Openly communicate and share information throughout the Authority relating to corporate initiatives. 	<ul style="list-style-type: none"> Active participation of employees in team-building initiatives during the year with corporate activities such as the Interfaith Service and Administrative Professional Week. Leave management which was at the forefront of the re-engineering process was launched. The infrastructure was developed and implemented to facilitate the transition from the use of paper form to an electronic computer-based leave management system.


STRATEGIC PRIORITY MAINTAIN A SAFE, HEALTHY AND PRODUCTIVE WORKING ENVIRONMENT FOR ALL EMPLOYEES, CONTRACTORS AND STAKEHOLDERS		
HEALTH, SAFETY, SECURITY AND ENVIRONMENT (HSSE) DEPARTMENT		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 To maintain and improve Occupational Safety, Security, Health and Environment standards at all facilities of the TTCAA by consistently adhering to the requirements of the OSH Act No.1 of 2004 (as amended), other national legislative statutes, international standards and best practices.	<ul style="list-style-type: none"> Schedule a roll-out of HSSE policies to all Departments within the TTCAA. Continuously assess the HSSE training requirements of all employees ensuring that the HSSE Training and Safety Awareness Programmes are implemented. Conducting GAP analysis to identify significant variances in compliance with OSH and HSSE best practices. Implementation of Indoor Air Quality (IAQMS) Management System. Audits, inspections and investigations. Critically review and manage contractor's safety performance. Ensure compliance with the Environmental Management Act (EMA) 2000 and other best practices and implement Reduce, Reuse and Recycle. 	<ul style="list-style-type: none"> Policy implementation is an ongoing process. During the fiscal year, the following policies were reviewed for implementation: <ul style="list-style-type: none"> Hurricane and Storm Emergency Response Safety training needs assessments are carried out on employees throughout the TTCAA utilising a prepared format. Findings are cross referenced to make final determinations on training needs. The roll-out of the HSSE Training and Safety Awareness Programmes are ongoing. GAP analyses were executed twice for the period under review to determine areas for improvement and to close identified GAPs. Indoor Air Quality assessments which form part of the Preventative Maintenance Programme were conducted by an external contractor. Monthly and weekly HSSE inspections and audits were conducted at the both Piarco and Crown Point Airports. All contractors undergo an orientation session in which risk assessments of the upcoming projects are discussed to ensure compliance with all applicable standards. The Reduce, Reuse and Recycle programme is ongoing with paper, plastic bottles, florescent bulbs, ink/toner cartridges and e-waste. Effective October 01, 2018, the Authority ceased supply and use of all styrofoam products.

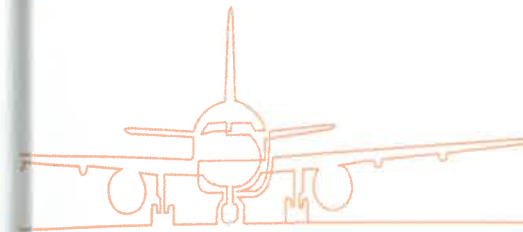
STRATEGIC PRIORITY PROVIDE EFFECTIVE, RELIABLE AND SECURE INFORMATION TECHNOLOGY SERVICES		
INFORMATION TECHNOLOGY DEPARTMENT (IT)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>A secure and robust information technology system throughout the Authority.</p>	<ul style="list-style-type: none"> Conduct an information technology audit and risk assessment of the Authority's information technology capabilities to inform amendments to policies, systems, procedures and adoption of new technologies. Modernise/update the information management systems, networks and platforms to protect business critical applications and data to promote the continuity of operations within the Authority. Review the Authority's divisions, functions and procedures with a view of promulgating business process re-engineering. 	<ul style="list-style-type: none"> In 2018, a detailed analysis of the Authority's network environment and current software applications were performed by an information technology specialist. The TTCAA has commenced initiatives to implement the recommendations to improve and modernise the information management system, networks and platforms. Google was selected as the TTCAA's new email provider. The IT Department worked directly with Google to migrate all the Authority's email data to the new server. IT refresher training was provided to all TTCAA staff. The aim of the training was to: <ul style="list-style-type: none"> Educate internal stakeholders on IT tools. Provide a better understanding of TTCAA network. Edify the internal stakeholders on the services provided by the IT Department. Promote positive attitudes towards technology. One of the strategic objectives for IT is to provide an intranet portal with extranet access, to support business activities within the Authority. In fiscal 2017/2018 an automated online leave management system was developed for the Human Resources Department and an automated requisition system was developed for the Finance and Accounting Department. The TTCAA internet services were upgraded by the implementation of a Primary Internet 50MB DIA circuit and a 10 MB Internet DIA circuit. The IT Department is also in the process of creating Wide Area Network (WAN) connection to remote sites; new Domestic Private Leased Circuit (DPLC) links are in the final stages of completion for the communication links.

STRATEGIC PRIORITY OPTIMISE THE PROPERTY AND EQUIPMENT TO SUPPORT THE DELIVERY OF SERVICES AND CORPORATE PRIORITIES		
PROPERTY MAINTENANCE AND ENGINEERING (PM&E) DEPARTMENT		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To successfully plan, develop and deliver on property maintenance projects to enhance and maintain an environment that supports high productivity output within the Authority.</p>	<ul style="list-style-type: none"> Amend the organisational structure of the PM&E Department for the effective deployment of human resources to meet the corporate objectives of the Authority. Develop a comprehensive maintenance implementation plan and related budgets for all the property and equipment under the purview of the PM&E Department. Develop, implement and record process work flows that will support the efficient delivery of maintenance projects. Develop a process to prioritise maintenance projects using a risk matrix methodology to ensure the optimum use of resources. 	<ul style="list-style-type: none"> The organisational structure of the PM&E Department was amended for the effective deployment of human resources to meet the corporate objectives of the Authority. A comprehensive maintenance implementation plan was completed. The PM&E Department in conjunction with the Corporate Planning Department has developed related budgets for all the property and equipment under the purview of the department. Workflows have been developed in the form of Gantt Charts for the monitoring of projects to be executed. For the period under review, the PM&E Department focused on the following strategic projects: <ul style="list-style-type: none"> Fencing of the Non Directional Beacon Tobago. Purchase of new ergonomic 24 hour task chairs for ACC and both Towers. Replacement of centralised air condition units at Morne Catherine. Space planning/redesign of Corporate Services layout. Air ducting cleaning and sanitisation for all occupied buildings at Administrative Complex. Refurbishment of the external of the Tobago ATC Tower Cabin. Engagement of long-term contract for the supply of consumables resulting in significant cost savings. Replacement of consumable items with more eco-friendly and cost effective solutions. Soft washing of radar facility at Morne Catherine. Installation of Fire Suppression System for Tobago Tower.

STRATEGIC PRIORITY OPTIMISE THE PROPERTY AND EQUIPMENT TO SUPPORT THE DELIVERY OF SERVICES AND CORPORATE PRIORITIES		
PROPERTY MAINTENANCE AND ENGINEERING (PM&E) DEPARTMENT		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>To successfully plan, develop and deliver on property maintenance projects to enhance and maintain an environment that supports high productivity output within the Authority.</p>	<ul style="list-style-type: none"> Utilise project management principles in developing, executing and monitoring all projects of the PM&E Department. Monitor and manage all PM&E projects in relation to cost, quality and time. Regular review of major maintenance programmes. 	<ul style="list-style-type: none"> Project management principles were consistently utilised for the development, execution and monitoring of all maintenance projects. Project milestones were consistently utilised to monitor all maintenance projects as it relates to cost, quality and time. Service reports were reviewed on a monthly basis against the maintenance plans and recommendations were made based on noted deviations. All deviations were closely monitored and corrective actions taken.

STRATEGIC PRIORITY BE THE PREMIER AVIATION TRAINING PROVIDER		
CIVIL AVIATION TRAINING CENTRE (CATC)		
 STRATEGIC OBJECTIVES	 STRATEGIC INITIATIVES	 ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>Creating the Civil Aviation Training Centre (CATC) into a world-class leading aviation training facility of academic excellence.</p> <p>Developing CATC into an economically viable business unit.</p>	<ul style="list-style-type: none"> Development of a high-level business plan for the CATC. Revising the CATC organisational structure based on the business plan and recruit and train staff as required. Provide state-of-the-art and modern facilities with advanced technological capabilities to facilitate the new age of learning. Develop curricula for the provision of tailored programmes to meet the needs of the aviation industry. Ensure the highest standards of quality for all programmes delivered by the CATC. Maximise the full potential of CATC's international affiliations and associations. 	<ul style="list-style-type: none"> A comprehensive business plan was developed for the CATC and was submitted to the Office of the Director General of Civil Aviation (DGCA) for approval. Based on the business plan, a revised organisational structure and manpower plan were completed. These documents were submitted to the Office of the DGCA for review and for onward approval by the Board. A comprehensive review of the technologies for the CATC has not been accomplished as this is contingent on the approval of the business plan. Once approved there will be two distinctive training arms as follows: <ul style="list-style-type: none"> Aviation Technical Training: ATO training, licencing training for ATC, pilots, aircraft engineers, etc. Academic Training: Advanced Diplomas, BSc, MSc in differing academic sciences. One new International Civil Aviation Organisation (ICAO) Standardised Training Package (STP) course is currently being developed and is expected to be completed by the end of the fiscal year. All old courses were reconstructed in accordance with the ICAO STP methodology. The CATC continues to establish and strengthen partnerships with affiliate aviation and academic institutions.

STRATEGIC PRIORITY BE THE PREMIER AVIATION TRAINING PROVIDER		
CIVIL AVIATION TRAINING CENTRE (CATC)		
STRATEGIC OBJECTIVES	STRATEGIC INITIATIVES	ACHIEVEMENT FOR FISCAL YEAR 2017/18
 <p>Creating the Civil Aviation Training Centre (CATC) into a world-class leading aviation training facility of academic excellence.</p> <p>Developing CATC into an economically viable business unit.</p>	<ul style="list-style-type: none"> Employ aggressive marketing strategies for the enhancement of the CATC image for greater market share and economic profitability. Consider the training needs of the Next Generation of Aviation Professionals (NGAP) for the sustainability of the future international air transportation system. 	<ul style="list-style-type: none"> A marketing plan was developed as part of the business plan for approval. A marketing budget was also submitted for approval and includes the following: <ul style="list-style-type: none"> Full-page advertisements in the daily newspapers / <i>Caribbean Beat</i> Magazine / LIAT On-board Magazine. Flyers. This initiative has not yet commenced. Further data regarding the NGAP has to be collated and analysed for the development of training programmes for the sustainability of the future local and regional air transportation system.

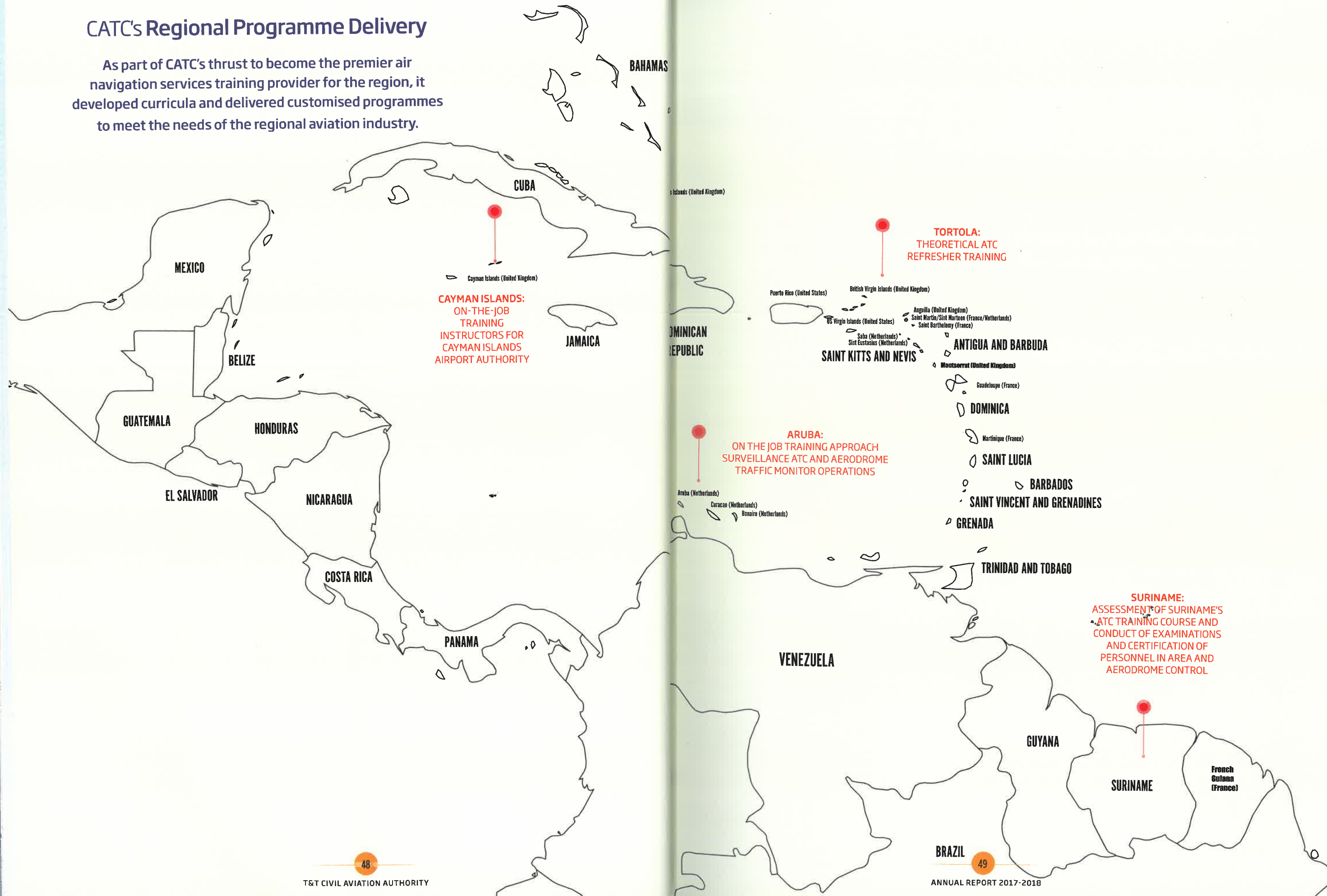


The CATC, based on this years' theme, "Towards Resilient Growth" and in trying to accomplish its goals and objectives, also focused on the achievement of the following activities:



CATC's Regional Programme Delivery

As part of CATC's thrust to become the premier air navigation services training provider for the region, it developed curricula and delivered customised programmes to meet the needs of the regional aviation industry.



The TTCAA Internship Experience

The Board of the Authority in collaboration with the Management team launched the TTCAA 2018 Internship Programme on **July 02, 2018**.

Sixteen students from divergent educational backgrounds were selected to participate this year. Testament to the power of the internship experience in assisting in the development of the next generation of professionals, four of the students were retained by the TTCAA after the programme concluded on October 01, 2018. These four students were engaged to assist in short-term projects that are currently in progress.

Chroniced below are the experiences of the interns.

ANTHONY GODDARD

This internship has proven to me that if you put your mind to something, you will be able to achieve it. I was given the opportunity to make great friends and work with amazing people.

I was lucky enough to have worked within various departments of the TTCAA and this would help me in my future endeavours. The experience also helped me to grow and develop in areas that I had been weak.

I will strongly advise that TTCAA continues this internship programme year after year, shaping the minds of our future leaders in the field of aviation and beyond.

GIATRI LALLA

In July 2018, I was given the opportunity to commence an internship with the TTCAA that would later change the course of my career. I was assigned to the Licensing Department which welcomed me openly. I felt that my contributions were given consideration as if I was an employee.

A comprehensive introduction into the TTCAA regulations and the operations of the Division were explained to me. I was able to interface with the regulatory personnel to better understand their roles and functions within the regulatory arm of the Authority.

The 2018 interns wholeheartedly thank the TTCAA family for welcoming us with open arms.

JABARI JOHN

With this internship, I gained a new sense of professionalism and a clearer view of what it meant to be in the professional world.

Working in the Human Resources Department of the TTCAA was exciting, there was always a lot of activities and opportunities for learning.

The staff was very welcoming and treated me as an equal rather than an intern. I wish to thank the TTCAA for affording me the opportunity to serve as an intern.

SYDNEY BISESSAR

My experience in the Finance & Accounting Department was simply magnificent. Interfacing with the members of the department helped me to utilise the knowledge I acquired at school and fully comprehend the daily activities within an intense accounting environment.

Through this internship, I was able to learn about punctuality, professional and effective communication and how proper working relationships are established and maintained.



TTCAA's Flood Relief Efforts

Out of adverse circumstances, arise stories of ordinary people doing extraordinary things. This year, Trinidad and Tobago experienced one of the most catastrophic floods in the nation's history. Several communities were adversely affected, as the floodwaters threaten lives, inundated homes, businesses and destroyed belongings. A few members of the Trinidad and Tobago Civil Aviation Authority staff were severely impacted by the floodwaters.

The national community and several organisations assisted with disaster relief initiatives. Many of the staff members of the Authority provided substantial support

during this challenging period. The Board and Management of the Authority wishes to express their sincerest gratitude to all the staff that:

- Provided contingency support to ensure that the air traffic control services were consistently maintained during the natural disaster.
- Immediately mobilised and assisted fellow staff members with intensive clean-up operations.
- Assisted in the procurement and distribution of essential supplies and appliances to our affected staff members.

Through teamwork and collaboration we can achieve greatness.

